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V I E W
OF THE
RUSSIAN EMPIRE,
[DURING THE REIGN OF
CATHARINE THE SECOND,
AND TO THE
CLOSE OF THE EIGHTEENTH CENTURY.

By WILLIAM TOOKE, F. R. S.
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FREE ECONOMICAL SOCIETY AT ST. PETERSBURG.

IN THREE VOLUMES.
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V I E W

OF THE

R U S S I A N E M P I R E.

BOOK X.

The Fishery:

AS the chase has always been the exclusive occupation of particular nations of the russian empire, so there are also tribes who maintain themselves principally or alone by the FISHERY; and with whom even the establishment of this trade forms a part of their civil constitution. It is naturally to be implied that this can only be the case with those nations and swarms whose habitations border on the sea, or comprise large rivers abounding in fish, and whose civilization is as yet by much too little advanced for selecting more productive and ingenious sources of livelihood. Some of these fisher nations follow this trade solely for their own support; while others, as the Kozaks of the Don and the Ural, and the tribes on the shores of the Volga, carry on an important and

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lucrative traffic with the products of their fishery. With most of the hordes and swarms of Siberia the chase and the fishery are equally important as the means of profit; the former is followed chiefly in summer, and the latter in the winter months. The same severity of frost which covers the coasts and the rivers with ice, and thus makes the fisherman idle, smooths the way to the huntsman through forests and over morasses, which in a warmer season would be utterly impassable.

For representing the various employments and objects of the fishery*, in some sort of method, we will treat of them according to the seas and districts in which this trade is principally carried on. Every sea, with the rivers that fall into it, has not only store of fishes and aquatic animals; but also the methods employed by the people for obtaining this property are as various as the nations and districts they inhabit.

*. The employments of the people are so various and complicated, that it is not easy unconditionally to reduce them to distinct classes. Among the businesses which I here state as belonging to the fishery some might with equal propriety be reckoned to the chase, as, for example, the capture of the large marine animals, particularly those which are sought for chiefly or solely on account of their furs. These occupations I have sometimes comprehended under different terms. However, this distribution is of so little consequence, that the reader and myself may be spared the trouble of any apology to shew why one or the other classification has been preferred.

We

We shall make a beginning with the FROZEN-OCEAN and its bays and rivers. All the trades carried on by the Russians on the Northern-ocean are of the greater consequence, as the benefit of them extends over the whole empire, and because the consumption of the products thence obtained is general. The arctic waters, it is well known, breed the largest sea-animals of the cetaceous genus, whales of several species, dolphins, &c *. for the capture of which ships are sent out by various nations. Here, in the extremities of the north, are likewise engendered the numberless shoals of stock-fish, herrings, and other smaller kinds, supplying food to whole countries, and by the capture whereof more than one nation has been enriched. The advantages rising from the fishery in these seas are indeed many and great, but the difficulties and perils attendant on it are not less either in number or magnitude, as the people here have not only to contend with the strength

* The whale, the morse, *trichecus rosmarus*, called by the Russians *morsch*, by the Germans *wallrofs*, by the Samoyedes *tiute*, by the French *vache marine*, and by our english navigators *morse*. See voyages of capt. Cook. Linnaeus in his *systema naturæ* denominates them, *phoca dentibus caninis exsertis*. The narhwal; the *spermaeti* whale or *physeter macrocephalus*: in the White-sea and the Frozen-ocean are also the *physeter catodon*, which about Archangel is falsely called the *beluga*, but ought not to be confounded with the dolphin, the sea-hog, *delphinus phocana*, &c.

and cunning of the animals they are in quest of, but also with the terrors of an inclement sky, with raging storms and tempests, and with enormous masses of ice that obstruct their navigation, and threaten them every moment with destruction. As the huge sea-animals are seldom met with in the White-sea, and as, by reason of the inhospitable climate of these dreary shores the coasts of the Northern-ocean are almost entirely destitute of human beings, the inhabitants of the governments of Archangel and Olonetz principally prosecute their fishery on Spitzbergen and Novaya Zemlia; these islands, therefore, as the chief scene of the northern fishery, deserve to be briefly characterised, in order to render the accounts that follow more clearly intelligible*.

Both islands are completely uninhabited. If by misfortune some poor mariners have been shipwrecked on their coasts, it is probable, that by the severity of the climate, against which they had not the means of defence, they have presently after perished. Some english and dutch seamen, who in the first periods of navigation in the Northern-ocean, wintered on these islands, for the most part lost their lives; or endured inexpressible misery. Yet the abode there is only dangerous to those navigators who have been used to a more genial

* Nachrichten ueber Spitzbergen, im journal von Russland, tom. iii. p. 397.

climate,

climate, and have not been able by proper clothes, nourishment, and motion, to resist the attacks of the scurvy, which are so easily brought on by an indolent and confined life during the tedious winter. The russian sailors from Archangel and Meseu, who annually visit both Novaya Zemlia and Spitsbergen, are more able to defy the horrors of the climate. They afford frequent examples of a very long sojourn in the polar countries: a seaman from Meseu, Feodor Rachmanin, wintered six-and-twenty times on Novaya Zemlia, which he also visited twice in summer-time, lived six winters on Spitsbergen, and sailed five years successively from the Yenissey to the shores of Siberia.

The extreme cold which reigns here the greater part of the year is the most piercing with a north wind; south and west winds bring snow and rain. For about the space of three months, Spitsbergen and the northern parts of Novaya Zemlia are shrouded in one uninterrupted night. To the Dutchmen, who in the year 1596 wintered on the north-eastern coast of this island, the sun became invisible on the third of November, and only appeared to them again on the four-and-twentieth of January, after having had a sort of twilight for upwards of fourteen days. This long night is, however, somewhat cheered by the aurora borealis, which appears in its full magnificence and splendor only in the polar regions. During the im-

penetrable darkness, sometimes for upwards of eight days together, tremendous hurricanes, with impetuous falls of snow and icy particles, raged with such fury that the wretched hunters dared not stir a step from their huts for fear of not being able to find them again. Through this deep polar night the russian sailors marked the passing days by the burning of lamps, which they filled afresh with fish-blubber every four-and-twenty hours.

The principal objects of the sea-chace about Spitsbergen and Novaya Zemlia are whales and morfes. For, though the Frozen-ocean produces a multitude of other marine animals, which in various ways might be made subservient to human industry, they seem to excite but little attention, or the capture of them is only an occasional or accidental employment. Every year a ship goes from Archangel to winter at Spitsbergen, and at least one, frequently more, to Novaya Zemlia. The inhabitants of Melen, who cannot so well bear the expence of fitting out a ship for a winter voyage as the archangel merchants, navigate only in summer the coasts of these countries.

WHALES abound not only in the higher regions of the Frozen-ocean, but they come in considerable numbers into the gulf of Kola; yet these useful fish, the products of which are so much sought after that the French and Dutch send out whole fleets to the North-sea for them, still always escape

escape the attention of the Russians that dwell upon the coasts. As the whale fishery, after the manner of carrying it on in the Eastern-ocean, will be described in the sequel, we shall here only give an account of the capture of the MORSE, because that toilsome and dangerous trade in the Northern-ocean seems to be the main business of the marine chase*.

The people who go out to catch the morse are hired for that purpose by a master or ship-owner, who not only furnishes them with the necessary vessels but fits them out with provisions, stores, and whatever they are likely to want on the voyage, but either agrees to give them a share of what they take or pays them certain wages. The latter, however, seldom exceed five or ten rubles for the summer; a trifling sum when we consider the hardships, toils, and dangers attending this profession. The morse-catchers usually take with them a year's provisions, as they are often obliged to pass the winter on board their ships. Every vessel has an oven for baking bread and cooking their victuals, for the supply of which they take the needful stock of wood. The only drink they carry out with them is water, with which when they go on shore they prepare quas. — The time of departure varies according to circumstances;

* Oseretzkoffkoy's description of the method of taking the morse, in the new St. Petersburg journal, 1783, vol. iv.

some set out at the beginning of summer, when the White-sea is free from ice, others not till autumn, especially if they intend to winter on the voyage. The greatest peril to which they are exposed at sea, is that of being hemmed in by the driving masses of ice; in this case the ice by its force beats in the sides of the vessel, and the morse-catchers are then reduced to the dreadful alternative either of being buried in the waves on the spot, or of getting on the fields of ice floating at the mercy of the winds, till cold and hunger put an end to their sufferings. And yet it has happened, though very rarely, that some of these poor fellows have been brought alive to land on their flakes of ice.

When the morse-catchers are happily arrived at the place of their destination, the first thing they do is to conduct their vessels to some safe anchorage, where they generally find several little huts that have been constructed by their predecessors in this hazardous warfare, and then commit themselves to the small boats, of which every vessel takes with it one or two to proceed to the conflict with the beasts of the ocean. This is usually done on the first fine day, because then the morse delight in going on the land or on the ice to repose; and besides, they are at times stimulated to leave their native element for a length of time for the purpose of copulation, which business lasts with these monsters for a month or two, or to cast their young,

young, or to rescue themselves from the bites of the sea-lice, by which the morse in summer is perpetually tormented, and from which they have no other means of escaping than by fleeing into an element which deprives these insects of life. All these causes together collect them frequently on the beach or fields of ice in prodigious numbers. When the captors discover one of these multitudes, they must have the precaution to approach them against the wind, because these animals have so fine a smell, that they perceive the approach of men with the wind at a great distance, and then immediately take to the water; whereas in the contrary case they continue lying undisturbed, though they even see the boat advancing to them. Besides, the morse-catchers by this means have the advantage of discovering sooner the place where their prey has couched; for these fat animals, especially in summer, emit far round them a horrid stench.

When the captors have reached this formidable encampment, they immediately quit their karbasses or boats, armed with nothing but their pikes, cut off the way to the sea from the morses, and then pierce those animals which come first to save themselves in the water. As it is the way with the morses to scramble over one another in their attempts to escape, from the numbers of the slain there soon arises a bulwark which effectually choakes up the passage to the living; and then the
captors

captors proceed with the slaughter till they have left not one alive. It sometimes happens that after such an engagement so great are the heaps of the dead, that the vessels can only contain the heads or the teeth; and the people are obliged to leave the fat or blubber and the skins behind.

But, easy as it is for the captors to conquer the morse by land, so dangerous is the conflict with these animals in their own element. We have only to recollect that the morse is commonly of the size of a large ox, and that, besides their sharp teeth, they are provided with two long stout tusks, for judging how a sea fight of this kind is likely to terminate. When any of the morses escape into the water before they can all be killed, the captors leap upon the ice and fall upon the animals with harpoons which they strive to strike into their breasts or their belly, and to each of which is fastened a long cord. This done, they drive a stake into the ice, wind the other end of the long harpoon-string round it, and are now drawn about, on the piece of ice on which they stand, by the animal till he has lost his strength, when they draw him upon the ice by the cord, and kill him outright.— But when the morses lie so near to the water, that they can leap in ere the attack begins, then the captors fasten the cord, when they have thrown the harpoon, only to the head of the boat, which is then drawn by the huge animal so deep into the water that the sailors must
all

all run immediately a-stern. The morse having fruitlessly endeavoured to get loose from the cord, rises erect upon the surface of the water and makes a furious attack on his persecutors. In this he is sometimes so successful as to shatter the boat with his tusks, or to throw himself suddenly by a proportionate leap into the midships. Then nothing is left to the crew but to jump overboard and to hold by the gunnel, till other morse-hunters come to their assistance in this desperate situation. — To mitigate the danger of these misfortunes the captors not only previously take all proper measures, but it is even laid down by laws and regulations what conduct every one is to observe during the voyage and in the actual encounter with the morse. Each of these companies consists generally of a master or pilot, two harpooners, two barrelling people, a steersman, and several rowers, each of whom has his appointed duty.

Though the morse spread from the Kurilly islands along all the Russian coast of the Northern-ocean, quite to Norway, Iceland, and Greenland*, this

* The elder Gmelin has circumstantially described this vast extent of their haunts, in his travels, tom. iii. p. 165. They begin about the Kurilly islands, are found in the parts contiguous to Behring's island, and in general throughout the whole of the Russian Archipelago, proceeding thence towards the Anadyr and the tschuktschian promontory, (where are found an astonishing quantity of morse-teeth, which leads
Gmelin

this trade is the most productive about Spitsbergen and Novaya Zemlia, consequently the morse-hunters preferably go thither. Many of them pass the winter on these inhospitable islands, in order to return with greater booty, as they then may pursue the white-bear, the rein-deer, and the ice-fox. In this case they build themselves little huts for the winter, which at times are so buried in snow that nobody can come out of them. As no wood at all grows on these islands, the morse-hunters must inevitably perish with cold, were not the sea to cast a great quantity of drift-wood on shore, among which are often found balks fit for building houses. From their way of living the scurvy is not dangerous here to the Russians: they drink no spirits, but merely quas, and sometimes they have even a vapour-bath in their huts. Besides this they make use of the antiscorbutic herbs that grow on these shores; they take care to provide themselves with a stock of yellow mulberries; and they find a drink made from the tops of pine-boughs and of juniper very wholesome. They drink, likewise, the warm blood of the rein deer, a remedy which they have probably learned of the

Gmelin to believe that they retire into these unfrequented regions for shedding their large old tusks for young ones,) and are found in swarms all along the coasts of the Frozen-ocean quite as far as Greenland. Herrmann's *statistische schilderung von Rußland*, p. 254.

Samoyedes.

Samoyedes. — For the sake of preserving some sort of social order among them, which is doubly necessary in this dark and dreary abode, and in a state of such total separation and helplessness, every company confers upon its steersman the right to chastise the disobedient and refractory; in which the rest of the company, or, in case of an actual rebellion, all the other winter-huts that may chance to be there, afford him their assistance. — In summer the morse-captors employ themselves very frequently in collecting of eider-down.

The partition of the property, when the enterprisers are returned home, is made in the following manner: the fitter-out of the ship takes one half-share of the whole, leaving the remainder to the ship's crew, of which each receives his portion according to the agreement previously made. Disproportionate as this reward may seem to such toils and dangers, yet according to the ideas and wants of this class of men it is always ample enough to animate others to similar risks; and the use which these honest, laborious, and rude people make of their hard earnings, often obtained at the hazard of their lives, clearly shews that these sacrifices are of no great value in their eyes. Like the english and dutch sailors in the east india trade, who squander away in one week the gains of a two-years' voyage, the russian morse-captor resigns his whole booty to Bacchus; and ere the produce of this hazardous industry

industry is arrived at the nearest market, the farmers of the kabaks are sharing the profits of the man that obtained it.

The products which are brought into the channels of commerce by the morse-fishery are principally the blubber and the skin of these marine-animals. The captors usually bring home the fat unmelted, whereby it loses much of its goodness, and consequently of its price; but this cannot be altered, as both the want of wood in the countries where the morse is taken, and the haste which the men are obliged to employ, allow them to do no better. When the fat is melted over the fire by these people at home, they usually mix with it the fat of the sea-dog or the beluga, and sell it under the name of *vervunnoye-salo*. — Of this oil is annually shipped from the port of Archangel from two to ten thousand tons, the ton at seven pood; the pood at Archangel costs a ruble and half and upwards. This oil is employed in soap-boiling, in the preparation of leather, and for the consumption of lamps; it is likewise employed to various other purposes by different tradesmen and mechanics.

The morse-skins are hung upon poles, as they are taken out of the sea, in the open air till they are become stiff, when they are prepared for farther use. Of them are made traces for carriages, horse-harnesses, &c. and from the cuttings excellent size for the paper-manufactories. A morse-skin

costs usually three, four, or more rubles. — The morse-teeth are transported partly to St. Petersburg and Mosco, and partly likewise to Archangel; where, and in the districts around it, they are wrought up into all the works for which ivory can be used. Here are made of them all sorts of elegant little boxes and caskets of open work in a variety of tastes, fan-sticks, knife-handles, card-counters, chess-men, &c. which according to the neatness of workmanship and the whiteness of the teeth bear a different price. The thickness of these teeth renders them so heavy, that sometimes five of the large tusks will weigh more than a pood: they are as white as ivory, having this advantage over it, that they are firmer and will not so soon become yellow. A pood of the largest morse-teeth costs upon the spot twenty or thirty rubles.*

Besides these marine animals already mentioned, in the capture of which the inhabitants of the sea-coasts are principally employed, the Frozen-ocean, likewise, teems with the NARHWAL, the POTT-FISH, from whose brain spermaceti is pre-

* In the year 1793, the export by sea from all the ports amounted to: of train-oil, 43,504 pood in value 106,332 rubles; of mammoht's bones and morse-tusks, 190 pood, value 6136 rubles. From Archangel in particular: train-oil, 41,830 poods, value 101,713 rubles; mammoht's bones and morse-tusks, 45 poods, value 1463 rubles.

pared,

pared, the SEA-DOG*, DOLPHIN, SEA-HOG†, HAY-FISH‡, sea-cow§, the sea-bear||, the sea-lion♂, the sea-otter®, and many others, which animals are caught either for their skin or their blubber. The sea-dogs are commonly most numerous in the Frozen-ocean, and often proceed into the White-sea; there are even several species of them, at least those which are known about the Oby, the Yenissey, and the Lena, under the russian name of *morskoie saez* (sea-hare), are entirely different from the common sort. These have a silver-white glossy skin and long woolly hair.—The Samoyedes watch for the sea-dogs, or seals, generally in the spring-season when these animals repair to the mouths of the rivers and get out of the water through holes which they have made in the ice by their breath. They usually lay near the aperture a board to which a rope is fastened. The Samoyede, lurking behind a block of ice, as soon as he sees the sea-dog fairly out, draws the board over the opening; the animal's retreat being thus cut off, he is killed without trouble. Another remarkable animal in these waters is the white-fish*, known to the Greenlanders under this name, but to the Russians by that of BELUGA, and

* *Phoca vitulina.* † *Delphinus phocana.* ‡ *Squalus carcharias.* § *Trichecus manatus.* || *Phoca ursina.*

♂ *Phoca leonina jubata.* ® *Lutra marina.*

* Pallas, travels, tom. iii. p. 91.

* *Physeter cantodon.*

which

which professor Pallas, by way of distinction, calls the sea-beluga. He belongs to the race of the dolphin, is not above three fathoms long, and is everywhere found in the Frozen-ocean. These animals keep together in shoals, and are driven upon shallow places in the White-sea and the gulf of the Oby by the Samoyedes, who associate into numerous companies for that purpose, and there harpooned. Their flesh is black, but over the whole body is drawn a white rind, out of which a very pure fat may be prepared*. According to Guldenstædt's opinion this species of fish might be beneficially used for obtaining train-oil. That the morse-catchers employ it in preparing the train-oil of that animal has already been remarked.

The fishery on the shores of the Frozen-ocean is, from its mostly inaccessible coasts, and from the want of people in these waste regions, not very considerable. In many places detached fishing-parties come to fish with nets at high-water. — Much more productive is the fishery on the coasts of the White-sea which skirt the government of Archangel. Among the principal objects of it are COD, NAVAGA †, PLAICE, SOALS, STOCK-FISH, and HERRINGS. The peculiar place where the stock-fish and kabelyau ‡ are caught is the left side of the White-sea, from its junction with

* Pallas, travels, tom. iii. p. 84—87.

† *Gadus callarias*. ‡ *Gadus morrhua*.

the ocean to the coasts of Norway. The fishermen remain from ten to fifty versts distant from the shore; at present, however, as the fishery here has greatly declined, they are obliged to go out far above Kola*. The herring-fishery in the White-sea and in the Northern-ocean was formerly a monopoly of the crown; but by an ukase of the year 1776, it was laid open to every one. The herrings caught here are mostly transported smoaked, dried, and salted; but seldom retain so good a relish as to be compared with the best that come from abroad, either because they have not the true method of salting them, or from the want of good salt. Russia buys yearly to the value of more than 100,000 rubles foreign herrings; the best of them which are indispensable to the luxury of the table, amount however to but a small quantity. The greater part of these fish are but of moderate quality and are imported for the demands of the common people in Livonia, Ingria, Finland, and the white-russian governments which might just as well be satisfied with home-produce, if, besides several other kinds of fish, they would take the *OMUL*† of the southern seas, in greater quantities, and salt them properly. This fish is the native of the Frozen-

* Lepekhin's journal of travels through various provinces of the russian empire, tom. iii. p. 215.

† *Salmo autumnalis*, PALL. *Corregonus artedi*, LEPEKHIN.

ocean, where they are found in prodigious quantities and very frequently taken, proceed not only into the White-sea, the Yenissey, and the Oby, but also go out of the Eastern-ocean into the rivers of Kamtschatka. Through the Yenissey they come not only by means of the Tunguska into the Angara, but also in the Tuba and the great lake Madshar on the sayane mountains. Finding in the southern lakes a deep and spacious water, they do not return to the ocean, but multiply in the vast pieces of water, and in so much the greater abundance as here they are not persecuted by any fish of prey. In all the regions lying beyond the Baikal, this shoal-fish is in high estimation; because, without it, the inhabitants, whose stony rivers have no stores of fish, would suffer from the want of a supply for their fasts*. It is also reckoned a great dainty by the people who dwell on the shores of the White-sea. It is caught most plentifully here in the little lakes which have communication with the rivers. For this purpose the fishermen make a sort of hedge in them of stakes interwoven with bayins of brushwood, running in a zig-zag direction, and terminating in a deep reservoir. Into this the omuls enter in such vast quantities, that the fishermen have only to go with their canoe into the pool and scoop them out with tubs made into ladles†.

* Pallas, travels, tom. iii. p. 79. 289.

† Lepekhin's travels. tom. iii. p. 228.

This great wealth of the Northern-ocean in marine-animals and fish of various sorts, allows us to expect not fewer in the rivers which flow into it. Besides several of the species we have named, the Dvina and the Petshora particularly abound in that excellent fish called by the Russians *SIGHI* and *SALMONS*, the latter being particularly reckoned the fattest and best flavoured of all northern Russia, and therefore are transported frozen or salted to a great distance round the country. — None of all the streams of the empire possess such hosts of migrating fish, passing out of the sea, as the Oby. In this river are not only a variety of fish known nowhere else, but also great plenty of *STURGEONS*, *STERLET*, *WHITE-SALMON*, *PIKES*, *MURÆNA**, *QUOBBE†*, and a multitude of other fish, the russian or ostiak names whereof without an explanation, would be perfectly unintelligible. The migrating fish come near Beresof about the month of June, and then proceed higher into the Irtysh, the Tobol, and the Tom. From these expeditions, during which the fish shed their spawn, most of them return half-grown, and those with weakened roes go in September, when the ice begins to form, into the lower region of the river Oby, and repair again in winter into the ocean before the rivers become putrid

* *Muræna Helena*, *Salmo albula*, PALLAS.

† Quappe in german. *Gadus lota*.

under

under the ice *. The fishery in the Oby is, particularly in the inferior region, chiefly carried on by Ostiaks and Samoyedes, but in the superior pursued by every one who chooses. The spring fishery commences not till June, when the waters are clear of ice and the fish come by myriads into the lakes, gulfs, and collateral rivers; for in the main river itself it is impossible to fish by reason of its breadth and depth, or only in very shallow places. Besides the drag-nets which are of use from June till some time in October, the Ostiaks have still various other methods of fishing. The most curious is that with a net called by them kilidan, and is drawn like a purse. The lower rim of it is extended by a stick, to which in the middle a stone is tied that it may lie flat on the ground. To the stone a cord is previously fastened, passing through a ring at the upper rim of the net which has a rope inserted round it, and by which the fisherman sitting in his canoe holds the net. Somewhat above the upper rim several strings are fixed to the net which the fisherman takes between his fingers, and by which he feels whenever fish come into the net.

* The putridity of this running-water under the ice proceeds from no other cause than the swampy quality of the ground and water of these rivers, their sluggish current and their impregnation with terrene salts. The putrid or dead water does not recover its freshness till spring, when the mass of it is increased by the melted snow.

In this case he immediately lets go the strings, and draws up the net by the rope; by which action the cross-stick shuts the lower aperture of the sack hanging downwards, and incloses the fish. With these sack-nets, sturgeon, white salmon, quobbs, and such kinds of fish are caught from June to September.

It is easy to conceive, that a people who make the fishery their principal occupation must have contrived a great variety of means, some of them ingenious, for pursuing this business at the least expence of time and trouble. Besides the purse-nets just described, and the fish-weels and wears that are everywhere in use, the Ostiaks and Samoyedes customarily go to fish in shallow places in the night-time, by the light of burning birch-bark, which they stick on poles. In the secondary rivers most northward, the Samoyedes as soon as the ice is strong make openings in it, over which they build huts, and sink in the water little lure-fish, cut out of wood, by lines made heavy with stones, by means of which they easily pierce with forked-spears the fish who are led to them by greediness or curiosity. They also make little wears across such rivers, let through the aperture white tree-bark sunk by stones to the bottom, and spear the fish as they play about, which are then plainly visible. — By these and many other inventions the Ostiaks and Samoyedes are enabled to supply themselves and the Russians their neighbours all
the

the year round with fish. In summer they have such a great superfluity of sturgeon alone, which are often a fathom long, and yield two pood of kaviar, that they throw away the smaller kinds of fish. The sturgeon, therefore, in Berea is never more than forty kopecks a pood, and the fat scarcely fifty kopecks, never above a ruble*.

The Irtysh contains almost all the fish which are met with in the Oby, and the fishery is here likewise very considerable. Its sterlet, next to that of the Oby, is the largest of any in the empire, being at times above an arshine and half in length. Quobbs are likewise in the Irtysh in surprising numbers, and they are caught not unfrequently of the length of two arshines. But shads, belugas, and sevrugas are neither in the Irtysh nor in the Oby. Of the salmon species here is only the white salmon; pikes are very rare. — The Yenissey and the Lena, as well as most of the rivers that fall into them, have likewise an exceeding great abundance of excellent kinds of fish; but as they mostly resemble those which have been already named, they may be passed over here.

The fishery on the coasts and the islands of the EASTERN-OCEAN is extremely remarkable for the multitude and quality of its objects and in

* Pallas, travels, tom. iii. p. 79—84.

regard to the employment it occasions. In those districts where agriculture and the rearing of cattle are impracticable from the soil and the climate, and european cultivation can only be prosecuted in particular places as a frequently unsuccessful attempt, no other pursuit is left for the thinly scattered and partly savage inhabitants than the chase and the fishery. The latter principally affords them the greater part of their necessities of life; and, parsimoniously as Nature has dealt out to them the rest of her gifts, so richly has she supplied the waters with the choicest, most useful, and best-tasted kinds of fish.

To this class primarily belongs in more than one respect the WHALE, the mention of which has been hitherto deferred, though found alike in the Frozen-ocean. About the coasts of Kamtschatka this huge sea-animal is so common, that on the reflux of the waters they are often seen sleeping on the shore, or pursuing the fish quite into the harbours. Neither is it here a thing unfrequent for the whales to be thrown dead on dry land, which the Kamtschadales regard as a lucky accident, as the capture of them is attended with great danger and numerous difficulties. From the southernmost cape of Kamtschatka the inhabitants go out to sea in baidars or little canoes, on the search for sleeping whales, which they wound with poisoned darts, and leave it
then

then to their good fortune whether the animal be thus killed and cast upon their shores. In the northern districts of this peninsula the whale is taken in large nets made of thick hardened thongs of morse-hides, and sunk in the water at the mouth of the gulf with heavy stones. When the animal is entangled in it, the struggles he makes to get free generally cost him his life; and then he is towed ashore by the captors, and slain amidst a variety of religious and fantastical ceremonies. But of all the tribes of these parts none are so addicted to the whale-fishery as the Tschuktschi, and the methods they use come nearest to those of the Europeans. They row to sea in very large baidars, the crew consisting of eight or ten people; when they meet a whale, one of these vessels bears up to him, whence the harpooner throws a spear into his body, leaving the iron or wooden hooks sticking in him while the shaft of the spear is drawn home. To the hooks a cord is fastened, several hundred fathom in length, and lies coiled up in the bottom of the canoe. This cord is held fast by the harpooner, letting it out according to the violent motions of the enraged animal: if he plunge, he has rope enough; if he rise the holder draws it in, who can always see which way the whale takes by means of a bladder attached to the cord. When the whale rises for the first time, the second canoe pursues him in like manner; and this is repeated by several vessels,

fels, till they have altogether sufficiently fixed and fatigued him. Then they suddenly set up a violent shouting, at which the raging animal is so confused that he makes for the land, and throws himself with amazing force upon the shore, where it is afterwards very easy to kill him quite. This method is in general practice on most of the islands of the russian Archipelago. The Tschuktschi rely so much upon their courage and dexterity in this business, that they only take the trouble to carry away the fat of the whale they have taken.

The uses made on the shores of the Eastern-ocean of the products of this capture are curious and manifold. The flesh of the whale, though so hard and coarse, will not keep long; it is therefore either immediately consumed, or hung up in the air to dry. The skin is separated from the lard, scraped, smoaked, and, to make it supple, beaten; it is wrought into cords and shoe-soles, which are so strong that they never wear out or become unserviceable. The fat is laid in pits filled up with hot stones, purified from the blubber, and then yields a well-tasted lard. The blubber, which is good for melting as well as for lamp-oil, is poured into the cleansed intestines, which are used instead of barrels or casks, and in which they generally keep liquids. With the whalebone the Kamtschadales sew their baidars together, or they make fishing-nets, fox-traps, and

and water-casks of it. Of the bones of the lower jaw they make under-lays to their sledges, knife-handles, and rings for their dog-harness. The sinews serve them for all the purposes of pack-thread, and the vertebræ of the back-bone are used as mortars for pounding*.

The Eastern-ocean contains, besides the whale, a considerable number of other large and remarkable marine animals, of which, however, we shall only notice such as by the capture of them employ the industry of the natives, and are useful to the purposes of life. Among these we may particularly reckon the sea-bear, the sea-lion, the sea-cow, and the sea-otter, all natives of that ocean, and of which, as the natural history of them is but little known, we shall at the same time give a short description†.

The SEA-BEAR appears in troops in the Eastern-ocean, principally between the kurilly and the aleutan islands. The largest of these animals are ninety english inches in length, and weigh eighteen or twenty pood. They resemble no land-animal more than the bear, excepting only the feet, and the hinder part of the body, which terminates in a grotesque figure. What is more sin-

* Steller's beschreibung von Kamtschatka, p. 98—104.

† Steller's ausführliche beschreibung von sonderbaren meerthieren. Halle 1753.—Nov. comment. acad. Petropol. tom. ii.

gular in the structure of these animals is their finny feet, having not only joints and toes, by which they are enabled to go on shore, to sit on their breech like the dog, and to use their paws in various ways, but likewise by means of the web between their toes, to swim with equal ease. — The manners of these animals are so peculiar and extraordinary that the account of them would be deemed a fiction, were it not accredited by the testimony of a sagacious and learned observer. The affection of the mother for her young is exceedingly great; and they in return endeavour to divert her by various kinds of frolicksome play. On seeing these gambols, it seems as if they were exercising feats of wrestling; one striving to give the other a fall; and if the father comes up growling, he drives the wrestlers afunder, coaxes the conqueror, and even tries himself to throw him to the ground: the greater the resistance shewn by the latter, the more he gains the love of the parents, to whom, on the other hand, their slothful or timid children, appear to give but little joy. Though polygamy prevails among the sea bears, and some of them have as many as fifty wives, yet every one watches over his offspring with uncommon jealousy, and is excessively furious if a stranger come too near them. Even when they lie by thousands on the beach, they are always divided family-wise into companies, and in like manner they swim together

ther in the ocean. The aged, who no longer have any wives, live solitary, and are of all the most grim; these frequently pass a whole month on the shore in sleep, without taking any food: but whatever approaches them, whether man or beast, they fall upon with the most outrageous fury. The sea-bears at times wage bloody wars together, the usual ground of hostility being either the females or a good couching place. When two are contending against one, others come up to assist the weaker party; and during the combat, the swimming spectators raise their heads above the water, and calmly look on for a length of time, till they also find a motive for mingling in the fight. Sometimes these conflicting armies cover a tract on the shore of two or three versts, and all the air resounds with their dreadful yells and growlings. It often happens that the combatants make an armistice for an hour to recreate their forces, during which they lie beside one another without any danger; then both parties suddenly rise up, each takes its place, and the battle begins anew with redoubled fury. This goes so far, that they pursue one another into the sea, when those of the victorious party drag their enemies back to land, and put them to the torture of their bites so long, till at length they lie faint and exhausted, and finally perish by the talons and beaks of the ravenous birds of prey that are hovering round. — The authority with
which

which the husbands rule over their wives and children is frequently displayed in a very tyrannical manner. When the wives, on being attacked by the hunters, abandon their cubs from affright, and these are carried off, the husbands immediately cease from pursuing the common foe, and turn upon the mother, as if to demand an account of what is become of their offspring. Then seizing them with their teeth, dash them with violence against the rocks; the wives, stunned with the blows, creep and crouch at the feet of their despots, and caressing them, shed abundance of tears. While the husband continues to feel his vexation, he goes growling to and fro, and rolling his eye-balls, just as the land-bears are wont to do; but when his rage is abated, he then begins also bitterly to weep for the loss of his young.

From June till the middle of August the sea-bears come ashore, in order, like the land-bears in winter, by three months of sleep and fasting to disburden themselves of their superfluous fat. This is the hunting season for them. The full-grown and aged are not easily frightened, but go boldly up to the men to fight them; yet whole droves of them will plunge all at once into the sea from fear, as if seized by a panic, on any sudden occasion of alarm. On land they run with great swiftness; a man, therefore, who is pursued by them has no means of escape but by climbing
up

up a steep mountain, where they cannot follow him so fast. The capture of these animals about Kamtschatka is prosecuted mostly at sea with the javelins furnished with hooks above described, which quit their shafts. The wounded beast strikes with the speed of an arrow through the water, drawing after him the canoe; and rages till he has bled to death. The skins of the sea-bears are of no great value; as their hair is black, thick, and rugged, and the hide very thick and harsh, they are only used like seal-skins for covering trunks and boxes. Below the long hair, close to the hide, lies, as with the beavers, a fine wool of a black glossy colour. The skin of the young that are cut out of their dam, are far more beautiful, and among the Siberiaks are of great worth, as they make their whole dress of them.

The SEA-LION is not much unlike in shape to the sea-bear; only he is twice as large and heavy: and besides the male sea-lion has a shaggy mane about his neck. Tremendous as the look of this animal is, and furiously as he defends himself in case of need, yet at the sight of a man he takes immediately to flight, and rushes into the sea. In this his proper element no hunter dares attack him; the usual method is to fall upon him when asleep. When a sea-lion in this condition is luckily descried by a hunter who can depend upon his own strength and fleetness

in running, he approaches the sleeping animal against the wind, in order not to be betrayed by the scent, and then strikes the before-mentioned hooked spear through the fore feet, while others are employed in winding the rope to which it is fastened round a post driven into the ground. This done, the animal, who now cannot easily escape, is shot with poisoned arrows or knocked on the head with clubs. They frequently do no more than wound him with poisoned arrows, and then leave him to his fate; as the salt seawater aggravates the smart of his wounds, he hastens soon back to the shore, where he then, dead or alive, becomes a prey to his captors. The chase of this animal implies so much courage and agility in the huntsman, that a Kamtshadale, who has been several times successful in it, passes for a hero, and all his life after is held in particular respect. The captors, not unfrequently go the distance of five-and twenty or thirty english miles out to sea in their canoes, made of the hides of marine animals and the bark of trees, on this perilous enterprise.

Tenderly as the sea-bears love their young, so little instinct the sea-lions seem to have for theirs; whereas the bloody conflicts of those animals are also customary with them. They couch on the same place with the sea-bears, who, from fear, resign to them the best spot, and never interfere in their intestine broils, though the sea-lions

lions do so with them as often as an opportunity offers. — The utility of these animals is by no means trifling. The fat, the skin, and the flesh of them are generally sweet and well-tasted, and the webs of the feet yield a jelly which passes for a dainty among the Kamtschadales. Of the hide they make leather and the thong-ropes which are used in the capture of these and other marine animals.

A third animal belonging to this collection is the SEA-COW, called by the Spaniards *manati*, and is found both on the eastern and the western coasts of America*. The largest of these animals are from four to five fathom long, and about the umbilical region where they measure most in girth, four fathom and a half. The head resembles that of a buffalo, and is connected to the body by a short neck. The fore-legs consist of two joints, the extremity whereof bears some resemblance to a horse's foot, but is provided beneath with several short bristles, which the animal employs in scratching up the sea-weeds that serve him as food from the stones. His back is like that of an ox; the great circumference of the belly declines at

* Both Pallas and Schreber agree that the sea-cow here described has a great resemblance with the *manati* of the Spaniards, yet that it ought to be considered as a peculiar species discriminated plainly by various characteristics. *Neue nordische beyträge*, tom. ii. p. 292.

once, but the tail is gradually thinner to the fins, which act instead of hind-feet.

These animals love wet and sandy places on the sea-shore; they therefore couch in whole droves about the mouths of rivers, and are here so tame that they will suffer themselves to be stroked and even struck at. The males seem to cohabit with only one female; at least a herd consists generally of only a pair of old ones of different sexes, of one grown up, and a small young one. Their appetite is so insatiable, that to feed it they constantly almost keep their head under water, and are little concerned for their safety. In their conjugal embraces they manifest an extraordinary tenderness, on which occasion the female plays the prude, and not till after reiterated importunities at last yields as if forced to compliance. The attachment of the males to the females proceeds such lengths that they submit to the most certain danger of death, if the latter be taken; and it not unfrequently happens that they will starve with hunger by the skeleton of their murdered companion. — The manner of taking these animals is with large spears barbed with iron, and fastened to a long stout rope. The hunters row warily up to a drove, and the marksman, who stands in the fore part of the canoe, throws the barbed shaft at the animal, who thereupon is drawn a-shore

by means of the rope, by people placed there for that purpose. But as at least thirty persons are necessary for this employment, and the animal resisting with the utmost exertion of his strength, the canoe follows him, and the captors endeavour to harass him with repeated wounds till he can no longer hold out. As soon as the sea-cows in the vicinity perceive the danger of their associate, they run up to his assistance. Some strive to overturn the canoe with their backs, others throw themselves athwart the rope, trying by that means to break it asunder, or they beat about with their tails in hopes to draw out the hooks from the skin of the wounded beast, in which too they sometimes succeed.

The thick and strong hide of these animals is employed by the Americans for shoe-soles and belts; the Tschuktches stretch them out by sticks and make use of them as canoes. The flesh of the sea-cow is indeed more coarse and fibrous than beef, but when boiled it is very like it in taste, with this advantage, that even in the hottest weather it does not easily spoil; the flesh of the young calves is, however, far more tender. The fat under the skin, which surrounds the whole body to a hand-breath, is white and fluid, smells and tastes very agreeably, and yields, when boiled, a butter resembling in taste the oil of almonds. As the multitude of these animals about Kamtschatka is excessively great in general,

and one of them weighing about two hundred poods, or eight thousand pounds, this nourishment might be alone sufficient to supply all the inhabitants the whole year through with wholesome and well-tasted meat.

The SEA-OTTER, wrongly called the kamtschadale beaver, differs from the river-otter only in this, that he lives in the sea, that he is about half as big again, and approaches nearer to the beaver in fineness of hair. There is no doubt of its being an american marine-animal and only a stranger on the coasts of Asia, where it dwells in what is called the Beaver-sea from the 50th to the 56th degree of north latitude. It is in length usually five and its circumference in the thickest part of the body is three feet; the largest of these animals weigh from about seventy to eighty pound. Their fur, in length, beauty, blackness, and glossiness of the hair, far excels the fur of the river-beaver. One such fur will sell at Kamtschatka for twenty, at Yakutsk for thirty, at Irkutsk for forty to fifty, but on the chinese borders in barter for eighty or a hundred rubles. The flesh of this animal is tolerably palatable, and even the flesh of the female is, contrary to the stated laws of Nature, the best shortly before and after the breeding season. The food of the sea-otter is crabs, conchylia, little fishes, some sea weeds, and also flesh. There is no manner of doubt that this useful animal, if
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Some people of spirit would go to the expence, might be brought into Ruffia and there rendered tame, since they are as fond of living in lakes, rivers, and ponds as in the sea. — In point of manners, there is no animal of all that we have mentioned so amusing and agreeable as this creature so much sought after for his fur. Their favourite manner of lying is family-wise together. The male careffes the female with his fore paws, with which he can do every thing in the most ingenious ways; and the female plays with her young, and rejects the dalliance of the father with an affected coyness. Their love for their young is so great that they not only rush into extremities for their deliverance, but not seldom grieve to death at the loss of them. On their flight they carry their sucklings in their mouth, and drive the full grown before them. When they are so fortunate as to escape their pursuers, they deride them as soon as they are safe in the sea with all manner of diverting tricks; one while keeping themselves right on end in the water and jumping over the waves, at the same time holding the fore paw over the eye as if to shade it from the sun while narrowly looking out for somebody; then lying flat on the back and stroking their belly; then throwing their young into the water, and fetching them out again. When a sea-otter is closely pressed, and sees no means of escape, he scolds and grins like an angry cat; if he receive

a blow, he immediately makes himself ready to die; he lies on his side, draws up his hind-legs together, and covers his eyes with his fore-paws.

The Kurils in the spring-season go out to sea in leather canoes or baidars the distance of ten versts and more for the capture of these animals. When they surprise a sea-otter, they immediately shoot arrows at him; and, as the animal cannot keep long at a time under water on account of respiration, he presents himself repeatedly at short intervals to the attacks of his enemies. By the bubbles that rise the hunters know which way he turns, and follow him in the vessel. When at length exhausted and breathless, he wishes to repose on the surface of the water, they kill him with a lance. — Sometimes the sea-otters run into fixed nets, with which they are likewise caught; and then in desperation it is common for them to bite and tear the flesh from each other. Nothing can be conceived more terrifying than the chase of the sea-otters on the floating ice, where the practice is to knock them down with clubs. The departure of the ice from the coasts of the ocean is generally accompanied with tremendous tempests and storms of snow; and yet the hunters do not forbear to go out even in the darkest nights in this pursuit. They run along the fields of ice, and jump without fear from one to the other, even when they are in agitation, now lifted up by the waves, and then falling as if going
to

to the bottom. Every captor has with him a knife, a pole in his hand, and snow-shoes at his feet which are furnished with hooks, in order to take hold of the ice, especially when it has accumulated flake upon flake. As the skins must be immediately stripped off, the Kurils and Kamtschadales perform this business, encompassed with danger and amidst the crushing of the floating masses of ice, with incredible celerity. When fortune favours them they bring their booty ashore; but they are frequently carried out to sea upon the ice, and then they must leave it all behind to provide for their own salvation. The able practitioners rescue themselves by swimming; others fasten themselves by cords to their dogs, by whom they are trustily drawn to land. These misfortunes, however, only befall them when the wind suddenly changes, for they seldom go upon these expeditions except when the ice is driving towards the coast. In favourable weather they run so far as to lose sight of land; sometimes they even venture across the channel that separates the two first of the Kurilly islands.

Of all the animals of the Eastern-ocean no one is of greater importance to commerce than the sea-otter, whose beautiful fur is everywhere highly esteemed, and in China sells for a very great price. As this animal forms the primary object of the fur-chace on the kurilly and aleutan islands, here will be the fittest place for giving some

account of this toilsome and dangerous, but also very lucrative branch of commerce*.

This important trade, which has hitherto been almost exclusively in the hands of the Russians, dates its origin immediately after the first voyage of discovery by the famous navigators Behring and Tschirikof in 1741, and has been so much extended since, that at present not only most of the islands and a part of the continent of America are visited by russian mariners, but even the inhabitants of these regions mostly acknowledge the russian sovereignty, and consequently pay their tribute in furs. The companies that carry on this trade are at the same time merchants and marine-hunters; for, as the furs, which are the aim and the emolument of their voyages, cannot be fetched away as from a public mart, the ships-companies must partly devote themselves to this chase, and partly induce the islanders, by presents and pledges, to grant them their concurrence. One of these ships-companies consists of from fifty to seventy men, who divide themselves on different islands in smaller parties, and therefore for their security avoid the most populous districts. For the same reason a voyage

* Pallas, erl uterungen ueber die im  stlichen ozean zwischen Sibirien und Amerika geschehenen entdeckungen; in den neuen nord. beytr. tom. i. p. 291. Account of the russian discoveries between Asia and America, &c. by Mr. COXE.

generally

generally takes up four or five years; that is, till they have got a sufficient quantity of furs for freighting the ship, and will at least doubly repay the fitting out of it, which usually costs between twenty and thirty thousand rubles. Notwithstanding that the expence is so considerable, the construction of these vessels, which are commonly two-masted galleots, is managed with so much frugality, that they are generally built only of fir or birch timber, and put together almost without any iron, so that it is really astonishing how these slight vessels can hold out at least two voyages in these tempestuous latitudes. They are usually equipped at Okhotsk, where, on account of the frequent supplies of stores and materials, they find it most convenient. With a very scanty stock of provisions on board, the ship doubles the cape of Kamtschatka in autumn, proceeding either direct to Behring's isle and the Copper island, or previously to one of the harbours on the eastern coast. Here the crew, which must be composed of at least one half Russians, is completed with Kamtschadales, who can be beneficially employed on account of their dexterity in hunting, and their robust constitution, with very poor nourishment. The ship is laid up during the whole winter on barks, and the people in the mean time are occupied in getting together a stock of dried sea-cow's flesh and the hides of sea-lions and seals, which they either employ in making themselves

themselves canoes, or trade in them to advantage with the islanders. When the following summer is somewhat advanced the ship sails to the island where they may expect to hunt with the best success, and where the stock they have collected, with what they shall occasionally acquire by hunting and fishing, will subsist them for three or four years in this state of continual jeopardy and warfare; where with this wretched fare they must be every moment on their guard against the hostile attacks of the islanders, provide for the chase, and in case of necessity defend the heartless Kamtschadales with russian intrepidity. — Those ships that proceed straight to Behring's or the Copper island, winter there likewise, and wait for the droves of sea-bears and sea-lions. The flesh of the latter, as well as of the sea-cow, is collected as a stock of provision, and the skins are carried with them to the islands.

As soon as the mariners are come hither, they endeavour either by good words or by force, to get possession of the children of the inhabitants, particularly the chiefs, as hostages; and when by so doing they think themselves safe, they distribute among the natives fox-traps, nets for catching the sea-otters, and sea-lion skins for making canoes, in return for which they must find them in victuals and furs throughout the winter. One part of the furs they endeavour to keep as tribute, for which they give them a receipt; for the rest they

they compensate the hunters with glass corals, false pearls, goat-hair, copper-kettles, hatchets, needles, and the like. In the spring they take back their traps and nets, and restore the hostages. The animosity of the islanders is such, that they can only venture to hunt or to go in small parties, in places where they are sure of their majority in numbers.

The main objects of these expeditions are the beautiful and costly furs of the sea-otter, the black-fox, and the blue rock-fox; but besides these many other furs are obtained. The greatest part of the sea-otter skins go to China, the rest are brought to Russia, and the crown, besides its tribute in natura, receives the tenth of the value of the furs brought away. When a ship safely returns from a voyage of four or five years, the profit is usually twice and often thrice as much, as the costs of the enterprise.

For gaining a competent idea of the great profits made by these voyages we have only to peruse the accounts by professor Pallas of some of these maritime expeditions*.

Ivan Solovief, with his ship's company, sailed in the year 1770 for the cape of Alaska, belong-

* Vid. Aufzug aus dem tagebuch einer seereise, welche Ivan Solovief in den jahren 1770—1775 bis an die zum festlande von Amerika gehörige landspitze Alaska verrichtet; und berichtet von einer im jahr 1772 angetretenen vierjährigen seereise zu den zwischen Kamtschatka und Amerika gelegenen inseln.

ing to the continent of America, and returned the 16th of July 1775 in the harbour of Okhotsk. Of the people that accompanied him, seventy-one in number, Russians, Kamtschadales, and Yakutes, only nine-and-thirty were left. Of the furs they brought with them, they delivered into the imperial caiffe 89 sea-otters, 104 black, 56 black-bellied, and 8 red-foxes. The company received 1833 sea-otters of different qualities, 10 foxes killed in the spring, and 30 in autumn, 10 young rock-foxes, and 1204 red-foxes.

The second ship's company cast anchor in the river Kamtschatka the 15th of September 1776. The tribute collected for the caiffe during the whole voyage consisted of 79 old and 15 half-grown sea-otters; moreover, 3 quite black, 16 dark-grey, 23 black-backed, 17 grey-bellied, and 6 common red-fox skins. The furs brought for the company, collected by the chace and by barter, amounted to 1890 large and half-grown sea-otters, 220 quite young, 1517 beaver-tails; 319 black and deep grey, 431 grey-breasted, 198 common red-foxes, 901 blue rock-foxes, and 1430 young sea-bears, which were all, according to custom, divided among the proprietors, and the tenth of them delivered into the caiffe.

From these statements is shewn, 1. The proportion wherein the several species of animals there mentioned, are found on the islands, and
may

may be collected by the chace; it appears, that the elsewhere so uncommon black and deep grey foxes, compose nearly one-third of the whole number. 2. The profit arising from one of these voyages, as each complete sea-otter skin, in the way of barter with the Chinese, is worth at least from 90 to 100 rubles, half-grown 40, a beaver-tail 2 to 4, a black or dark grey fox skin 5 to 40 and more, an ordinary fox skin 1 to 5, a rock-fox $1\frac{1}{2}$, and a young sea-bear $1\frac{1}{2}$ to 6 rubles.

Though the Eastern-ocean, beside the above-mentioned species, contains a multitude of other marine-animals, as, the sword-fish, the morse, the seal, the sea-beluga, &c. the capture and uses whereof are of no small consequence to the inhabitants of its coasts; yet, to avoid repetitions, we shall pass them by in silence. Ere we quit, however, these distant regions, we must take notice of the amazing abundance of fish, with which nature has endowed Kamtschatka; and by which she has in some measure atoned for her unkind dealing with the desert and unfruitful soil of that peninsula*. Here, where the agriculture might as well be called gardening, and where they have not the most common domestic and country-animals, the inhabitants maintain themselves almost solely by fishing, which affords them in general a great abundance, though neither the rivers nor the lakes have any peculiar

* Steller's Beschreibung von Kamtschatka, p. 141—175.
 sorts

sorts of fish. All the fish of Kamtschatka come in the spring from the sea, and proceed up the rivers in such inexpressible multitudes, that they are swelled by the great influx, and overflow their banks with living waves. Towards evening, when the fish make a halt in their progress upwards, or on the falling of the water, the shores on both sides are covered with the dead, diffusing such a stench that epidemical distempers might ensue were it not for the beneficent winds which are incessantly purifying the air. At the mouths of the rivers they are usually taken out with tubs, and, instead of purse-nets, which the first draught would tear to pieces, they make use of a sort of bird-net. Even dogs and bears go fishing here, by placing themselves on the margin and seizing the fish as they pass by with their mouths or their paws.

All the fish that advance far up the rivers are of the salmon kinds, of which more varieties are found at Kamtschatka than the natural history of the rest of the globe can produce. The salmons and trouts are indeed generally admired for their excellent flavour, but the several species that are taken on this peninsula are preferred to all others in that particular. A remarkable circumstance in the œconomy of these animals is, that they are begotten and born in the rivers, but are brought up in the sea, and afterwards die in the rivers. Incited by the instinct to propagate their
kind,

kind, they toil up the rivers in spring, burdened with milt and spawn, where they consummate the business of multiplication and deposit their eggs in the sand. This done, they pursue their voyage, and having lived upon the provision they brought along with them, till it is all consumed, they die*. The young fry swim in autumn to the sea, remain there till their organic conformation is completed, and in the third year take their course up the same rivers in which they were engendered, in order to accomplish the intentions of nature by their propagation and their death. Particularly interesting is the remark which attentive naturalists have made, that several kinds of fish take with them into the rivers one of their family begotten in the former year, who keeps them company, till they have performed the work of procreation and emitted their spawn. They then proceed on, while the little one-year-old guide remains till November with his untutored brothers and sisters, whom he protects against other fish, and conducts into the sea. — Each

* This is the case only in countries like Kamtschatka, where the rivers are frozen for the greater part of the year, and do not afford the fish sufficient nourishment; whereas in warmer streams, the remoter sources having a muddy and deep bottom with numerous water-insects, they live there many years and propagate their species; only with this difference, that they come up from the deeps in spring, go farther up the rivers, and procreate at the mouths of other rivers and brooks.

species

species of fish has a particular and stated time for ascending the rivers from the sea, and one emigration is followed by another; only in August three or four kinds go up at once, but these never mix with one another, each keeping together in close parties.

As the fish of Kamtschatka are only caught for the consumption of the inhabitants, and have never hitherto been made an object of trade, it would be needless to specify the numerous kinds and species of them by name*. Nowhere is this plenty more beneficial than here, where the fish almost every where supply the place of bread, and, in various forms of preparation, constitute the whole stock of provisions for the long winter. To prevent the distaste that might ensue upon the uniform continuance of the same diet, the Kamtschadales have found out various means, some of them curious enough, of procuring themselves a change by a diversity in the mode of preparation. The stock of provision most commonly as well as most easily procured consists of

* Amongst them, however, is the herring, which is exceedingly plenty in the kamtschadale sea, and so violently persecuted by the whales, as to be obliged frequently to take refuge in the lakes and rivers. These fish traverse the bays and gulfs in such amazing shoals, that at one draught, with a net of four-and-twenty fathoms, as many are taken as will fill four tons. They are as agreeable to the taste as the dutch, and when salted keep as well. The Kamtschadales never eat them, using them only to boil blubber from them.

four fish: they fill a large hole in the ground with them, strew them over with wood ashes, or lay them first in a sharp alkaline lye, and cover the hole with leaves and earth. In this manner, which is customary with the Samoyedes and the Yakutes, they keep the fish the whole year through without putrifying; but the Kamtschadales, thinking this method much too complex, generally leave their's to corrupt without lye, and yet find it delicious. The fish are almost as often dried in the air, to which end they are cut lengthwise in strings, cleared of the bones, and hung up under a shed made for that purpose. This way of dressing their victuals recommends itself particularly to the slothful Kamtschadales by the facility with which it is performed. Fish dried in this manner are the sole provision which the Kamtschadales carry out with them, and when it is pounded it affords a nutriment similar to that of bread. Again, the fish are chopped to a kind of meal, with which they thicken their soup and make it more nourishing; the ordinary method of preserving them salted, smoked, and frozen, is, however, only in use among the Russians who live at Kamtschatka.

We proceed now to describe the fishery on the CASPIAN, the most important branch by far of this business in Russia. Nowhere in the whole circuit of the empire is the fishery carried on so much in the gross as here, and nowhere does it

afford so many objects of consumption and commerce. This is not only in a great measure owing to its extraordinary wealth in excellent kinds of fish, but also to its commodious situation in the centre of the empire, facilitated by water communications, and the good method in which this trade is prosecuted. In fact, the fishery on the Caspian, as Pallas observes, is in some respects as important to Russia, as the herring, the cod, and the whale fishery, are to other maritime powers of Europe.

The fishery on the northern or Russian shores of the Caspian, is partly let out to Astrakhan merchants, whose great opulence is chiefly founded on it; it partly belongs, in virtue of ancient privileges, to the Uralian Kozaks, who not only claim that right on the river Ural, but also on a tract of coast extending seventy versts in length, from the mouth of the Ural, to what is called the wealthy bay, in which the south-western collateral arm of that river falls. Of this latter we shall afterwards speak in mentioning the Ural; at present our business is only with the fishery in general on the Caspian, and particularly with the portion belonging to the crown, and let out to others*.

The Caspian is usually free from ice towards the latter end of March, which usually covers the sea to a great distance from the shore, and then immediately with April begins the fishery. This is

* Pallas, travels, tom. ii. p. 333—349.

undertaken

undertaken by several contractors, every one of whom has his particular station or vataga in a different place, which commonly bears the name of the proprietor. At all these vatagas no care at all is taken about the smaller species of fish which are caught here as well as in the Volga and the Ural, and transported both dried and salted, to the inland parts of the empire; here, on the sea, are only taken the several kinds of sturgeon, namely, 'BELUGA*', STURGEON, and SEVRUGA†, and next to these SHADS§, and BARBEL. Every vataga is occupied by fifty or eighty, or up to a hundred-and-twenty men, most of whom carry on a separate trade: here are also pilots, fishermen, salters, preparers of isinglass and kaviar, &c. The vatagas have also their own vessels of various dimensions and construction, in which they may venture out to sea without the necessity of taking with them a great number of hands; again, at each of them is a galleot, for fetching provisions and salt from Astrakhan, and for sending away the fish they have taken. Adjacent to the buildings in which the people are quartered, several sheds are built, where the roes are prepared, the isinglass dried, and the stock of fish orderly kept. For preserving the salted fish, deep and well-secured ice-cellars of considerable magnitude are dug under ground;

* *Accipenser huso.*

† *Accipenser stellatus.* Pall.

§ *Silurus glanis.*

these are floored with thick deals, and have large reservoirs lined with planks, in which the fresh fish are pickled in a strong brine. At the two sides of these brine-vats are parts divided off, in which the fish, on being taken out of the pickle, are placed in layers and sprinkled with salt; behind the compartments in which the fish are thus laid, the space to the side of the cellar is rammed full of ice, for the better preservation of this easily perishable commodity. The distance of one vataga from another is indefinite; as are also the bounds in which neighbouring vatagas may fish. Only it is not allowed for distant fisheries to approach any other than their own contiguous borders. The taxes paid by the vatagas to the crown, are rated according to the quantity of prepared roes and isinglas, and for every pood of isinglas five rubles, but for a pood of roes two rubles eighty kopecks are paid into the caisse.

The capture at these vatagas is not prosecuted the whole year through, but only in spring, autumn, and winter, when the fish repair to the shores in greatest numbers. In spring all the bays swarm with belugas, which are then without roes, and come hither only in quest of prey; not less numerous are then the sevrugas, which about this time spawn and do not return during the rest of the year. In autumn and winter only the beluga is caught, which then collect in the bays, either for passing the winter or to spawn. These two species

species of sturgeon, from the above-mentioned causes, seek fresh or moderately salt water; and to that end repair not only to the rivers, but also to the gulfs and bays of the sea, where they find this advantage and convenient places for laying their spawn: whereas the real sturgeon proceeds direct to the mouths of the rivers without tarrying in the bays. These fish therefore are only caught at those vatagas which are at the mouths of the Volga and on the river itself; and a sturgeon is such a rarity at the fisheries on the bays of the sea, that by a very antient custom, it is the property of the individual who draws him out of the water.

The spring-capture begins as soon as the sea is free from ice, which frequently is about the middle of March. Then come first innumerable myriads of little fish driving towards the shore, of which particularly the obla, a sort of scale-fish, is caught and kept alive in wells, in order to have always a sufficient quantity for baiting the hooks while the season lasts. This little fry is next followed by prodigious swarms of ravenous belugas; the season for taking which, however, seldom continues two full weeks, for which reason the fishermen are obliged to work day and night. In good years, a vessel, while the swarming lasts, may bring up within four-and-twenty hours fifty and more of these large fish. The capture of the beluga is generally practised in the same method at all the

vatagas, with a machine consisting of a rope seventy ells in length, to which a hundred-and-twenty-five lines 1½ fathom long each, with as many large angling hooks, are tied. This rope, with the said number of hooks is technically termed a nest; and thirty of these nests tied together commonly belong to a machine, which is therefore several hundred fathoms in length. Between every two nests a stone is tied of some pounds weight, and the two ends of a whole machine are furnished with wooden anchors. Because the machine yields, and yet floats with a great weight in the water, even the strongest fishes cannot escape; but the anchors prevent the machine from being put out of its situation, either by the motion of the fish or by the agitation of the sea. The machine when laid is visited twice a day, and the hooks cautiously taken up along the rope. Passing a rope through the gills of the fish brought up, they let them down again into the water in order to bring them on shore alive.

Here they are dragged with hooks to the beach, which is laid with planks, and cut up in the following order: The lower part of the stomach, with the guts are thrown away; the fleshy gullet is salted for eating. The roe lies through the whole body adjoining to the entrails; this is taken out with the hands and cast into tubs, in which it is carried away by the kaviar-makers; then follows the float or founds which runs along the whole

whole back, and is given to the isinglass-makers. Lastly, they cut off the cartilage of the back, in order to extract the dorsal finews, which are washed, hung upon poles, and dried in the air. The fish being cleared of its entrails, the fat adhering about the milt and to the sides is scraped away with knives, and collected into tubs, boiled down, and cleansed. As this fresh fat is of a good taste, it is used during the fasts instead of butter or oil. The cleansed fish are at last brought into the cellar above described, where they are first laid to pickle in brine, and then, strewed with salt, are laid up in courses on each other. — The belugas not unfrequently are of a prodigious size; in the year 1769 one was caught in the wealthy bay, which measured eight and a half arshines in length, and weighed seventy pood, or two thousand eight hundred pound, and out of which twenty pood of roe was obtained. They are sometimes taken in the Volga of a thousand or fifteen hundred pounds weight.

When the shoaling of the beluga has ceased, immediately comes on the train of sevrugas, which happens only once a year, and also lasts not much above two weeks; but during this short space is so much the more numerous. At one vataga, with a favourable sea-breeze, it is usual to catch sixteen and sometimes twenty thousand of these fish. The nets made use of for this purpose are so thick that the machines are only a span wide.

Five-and-twenty of them are tied together and laid at the depth of one fathom at most on sunk posts, as the sevrugas go to shallow places and among the shilf. The largest of these fish are never above four arshines and a half in length, but their roes, as well as their founds, are much more esteemed than those of the beluga, and consequently bear a greater price. The flesh is partly salted down and partly dried in the sun.

About the middle of May the spring-capture on the sea-coast is over, and then the fishermen repair with the goods they have got to Astrakhan, where it is all again laid up in store-cellars and thence disposed of wholesale to the merchants of that city. — The autumn-capture begins in the middle of September, and continues through all October. In the mode of proceeding there is no difference between this and the former, only at this season no other fish than beluga and, where there is fresh water, sturgeon are taken. — The winter-capture begins as soon as the ice is set in on the sea, and lasts the whole winter; then, likewise, only beluga are caught. For this purpose the same machine with the angling-hooks is set, only it is now under the ice. Apertures are cut through the ice at the distance of every eight paces, through which the rope, by means of long poles, is introduced. ~~Where~~ ^{When} two nests are tied together, the machine is fastened to a cross pole which rests on the brink of the aperture. For the bait they have a stock

stock to last the winter of obla-fish, which they have previously salted for that purpose. When they would take up the fish that are caught they loosen one single net, fasten to one end of it a sufficient length of rope for enabling them to draw it back without delay, and haul it out at the other end through the aperture. The fish are conveyed over the ice on sledges to the vataga, and about this time immediately frozen fresh and carried to Astrakhan.

Besides the great vatagas the proprietors of them have fishing-huts here and there on the sea-coasts, where there is no capture of sturgeons, at which, mostly in summer, shad and barbels are taken with drag-nets. These two kinds of fish go not into the rivers in summer, but keep about the sea-shore, as they find there a better nourishment. The shad here usually weigh eight pood, and the barbel a pood and a half; the former are extremely fat in summer. The roes of this fish are thrown away, but of its sounds an ordinary sort of fish-glue is made.

Of all the rivers that devolve their streams into the Caspian, none more teems with fish than the Volga*, which not only supplies the parts adjacent

* The several species of fish, and the various methods of taking them in these rivers, are particularly described by several authors in the german language. At Astrakhan: travels of the younger Gmelin, tom. ii. p. 199—247. Falk's beytræge,

cent but the greater part of the empire with the several sorts of sturgeons, with kaviar and an incredible quantity of various kinds of smaller fish. This store of wealth, which no other river in Europe possesses in an equal degree, is also the cause that the countrymen living about the Volga neglect agriculture to devote themselves to the fishery. Among the fish peculiar to the Volga, which seldom or never come into the collateral rivers, are the beluga, the sturgeon, the sterlet, the fevruga, the salmon, and white salmon *. Somewhat more common are the barbel, the shad †, the schellesnitza ‡, and what is called the tschechon §. Still in greater plenty in the subordinate streams are the || sudak, perch, and innumerable kinds of scale-fish. Only the eel is neither in the Volga, nor in any of the rivers that fall into it, nor in any of the neighbouring lakes, neither is it known farther on through all Siberia. Instead of it there is the greater abundance of quobbs, and also crabs are extremely numerous and of extraordinary size, but bad tasted.

betræge, tom. i. p. 138. Ozeretzkofskoi's description of Astrakhan, in the journal von Russland, tom. iii. p. 47—163. — At Saratof: Lepekhin's travels, tom. i. p. 224—228. — At Simbirsk: Pallas, travels, tom. i. p. 131—140. — In the Kamma: Pallas, travels, tom. iii. p. 488, &c.

* *Salmo nelma*. † *Silurus glanis*. ‡ *Clupea alosa*. PALL.
§ *Cyprinus cultratus*. PALL. || *Lucio perca*.

Of

Of all the fish of the Volga, the several kinds of STURGEON and the WHITE SALMON are the best. The beluga is sometimes caught of twenty but never of more than five-and-twenty spans in length, and weighing between thirty and five-and-forty pood; the number, however, of small milsters, of seven or eight spans, is incomparably greater. Sturgeons are got from five to eight spans long, and from twenty pound to two pood in weight. The sevruga holds the middle station between the beluga and the sturgeon. The red salmon is only observed here in the two last months of the year, and even then but seldom; the white salmon swim against the stream in great numbers from the beginning of January to some time in July; both are from three to five spans long, and at most weigh thirty pounds. The barbel is often larger and heavier, and the shad grows the largest after the beluga. — Of all the subordinate rivers that fall into the Volga, the Kamma is the wealthiest in fish; and the fish of the Kamma are held to be the best flavoured of all in Russia, at least its sturgeon, sterlet, and white salmon are far preferable to those of the Volga. Besides these three kinds, a principal fish of the Kamma is a small salmon called in russ krasnaya rebra, red or beautiful fish *, commonly one and a half or two arshines long, having likewise the bream and the tschechon.

* *Salmo eriox*, or *salmo alpinus*.

Scarcely anywhere in the world is there such a variety of contrivances and machines, some of them truly sensible and ingenious, for the capture of fish as are in use on the Volga, and particularly in the confines of Astrakhan. The several inventions of this nature may be reduced to three classes, one comprising the fish-wears, the second the angle, and the third the net. As it is impossible to diverge into a circumstantial description of these several kinds, we shall entirely pass over the two latter classes, of which every one can easily form some idea himself, and only give a brief account of the most remarkable wears.

These are either properly wears*, or fish-traps†. The *utſchiugs* again undergo several variations, but the sort most in use is that called *saboika*, and is constructed in the following manner. Right across the stream strong posts are driven at the distance of half an ell asunder; when the current is very rapid, in a serpentine form, but else in a direct line. This done, they build against the stream, likewise of stakes, chambers somewhat in the shape of a heart, in the middle of which several holes are made, and are divided from each other. The stakes at the entrance to these compartments are but slightly fixed, so that they may give way on the pressure of the larger fish. The circumference of each of these chambers may be

* *Utſchiugi*. † *Gorodba*.

about six fathom, and the mouth of it two ells. The interstice between the poles, likewise those which form the chambers, is filled by a row of perpendicular sticks, not reaching to the ground, but in the greatest depth are only four fathom long, and are connected together by willow twigs. Now, when the fish come up the stream, and press in at the entrance to the chambers, it is scarcely possible for them, by reason of the small space in the angular compartments of it, to turn their bodies so as to get out, but they must remain in that position till the arrival of the fisherman. The smaller fish, which might perhaps be able to get through the aperture, are by the force of the stream, which as every one knows they strive against, prevented from it. — These wears have the advantage that they can remain standing the whole year through, though they are often in want of laborious and difficult repairs; but the pereboika, which make a sort of dam necessary, is only serviceable for the three months of autumn, and must every year be built anew. At every time of the breaking up of the ice they are taken to pieces; by which one half of the materials are lost, and generally nothing is saved*.

In the lower regions of the Volga, the before-

* For many more particulars concerning this subject, see "Russia, or a complete description, &c." vol. iv. p. 395, 396, & seq.

mentioned fish-trap, called gorodba, is generally employed. It consists likewise of a wear carried across the stream, provided with several chambers, in which the fish are caught. In winter the ice is constantly kept open over these chambers, and a hut built having space enough for the people, and in which they warm themselves by a little fire. At the bottom of the chamber lies a frame, the full size of it, filled with net or basket work, and may be wound up by a line fastened to each of its corners. Over the opening, through which the fish enter, a trap-grating or net is placed, and before it, from a floating cross-wood to the frame that lies upon the ground, nooses are set, which every fish must touch on entering the chamber, whereby the cross-wood is put in motion. The people, on perceiving the vibration of this, let down the trap-fall and wind up the wire grating on which lie the fish that are caught. But that the labourers need not be continually on the watch all night, a bell is connected with the nooses before-mentioned, by which every fish announces himself on his entrance, and the trap-fall is so contrived, that on the motion of the fish it must drop of itself.

The *utshiugs* are generally constructed only in the territory of Astrakhan, where the fishery on the Volga is so important and remarkable an object of industry and traffic, as to merit a rather more circumstantial account. The tartarian word
utshiug

utschiug properly signifies that kind of dam which has been above described under the name faboika ; but at present it implies a whole fishing-station, which is usually much larger than a vataga. All the utschiugs are on the arms of the Volga, which at their several mouths disembogue into the Caspian, by which its great store of fish may be conceived. Every utschiug, besides a number of buildings proper to it, has also a church, and dwelling-houses for the labourers and their families. These people, each of whom has his stated business, are not upon wages, as the fishermen at the vatagas, but have a yearly pension for life, and are inrolled to the utschiugs ; consequently, they and their posterity for ever are fixed to the same employment. — The utschiugs at first, upon the conquest of the tartarian khanate, belonged to the patriarch or the clergy ; in the year 1704 they became an imperialty, the revenues whereof were obliged to be brought into the exchequer of the empire ; but since the year 1763 they have been granted to the merchants of Astrakhan, in consideration of a small tribute, and the revenues are managed by what is called the fish-comptoir, the directors and members whereof are elected from the body of astrakhan burghers. The profits, after deducting the very moderate tribute to the crown, must be divided in equal portions among the merchants ; but by several reports antient and modern, the fish-comptoir are so arrogant and arbitrary,

arbitrary in their proceedings, that the generous abandonment of her prerogative by the late empress, who intended that the benefit should extend over the whole, is only advantageous to certain privileged persons, who enrich themselves at the common expence*.

Not

* In 1769 Gmelin, and in the year 1785 Oseretzkoffkoi made heavy complaints on this subject. The latter gives the following account of the then state of the astrakhan fishery. In that year there were four chief utschuigs, belonging to which were 450 inrolled boors and settlers of the male sex, besides the church-officers, burghers, and free inhabitants. The annual tribute to the crown amounted to 16,216 rubles; but the astrakhan corporation was no longer in the exclusive possession of all the fisheries; for in the year 1770 the land-surveyors sold 5755 desættines of land to several noblemen, who with these tracts of land obtained also some of the principal fisheries, and the merchants therefore are forced to hire these of them at a very high rate, though they pay the said tribute to the crown. The remaining fisheries are let by the comptoir to astrakhan merchants, who commonly enter into copartnerships for that purpose, of which there were at that time sixty-four. The kantora had entered into an obligation to supply all Astrakhan with good fish, and never to sell it higher than thirty kopecks the pood: but, as it sells for more than that price even at the utschuigs, this contract can no longer be kept, especially as all the officers of the crown have a right to a daily supply of fish for their own use from the kantora. — Notwithstanding all this, the astrakhan merchants have enriched themselves considerably by these fisheries, and it is the more to be wondered at, as the kantora which appears to have received from 1762 to 1785 above a million of rubles, yet was very near being obliged to take up a sum exceeding twenty thousand rubles of the imperial lombard.

Beside

Not less considerable than that of the Volga is the fishery on the Ural, as forming the principal support and occupation of the uralian Kozaks *; and nowhere in Russia is this trade, by the laws of antient usage, so nicely circumscribed and so well regulated as here. Ever since the government granted the fishery to the Kozaks, in return for the payment of the moderate stipulation formerly annexed to the *utschiug* at Gurief, they have completely broken up the said fish-weir, and instead thereof inclosed the whole river about the

Besides the actual inhabitants of Astrakhan, who are employed in the fishery, every spring about 10,000 fishing-canoes come thither having in each at least two people, so that the number of strangers who follow this trade at Astrakhan far exceeds 20,000. Some of these hire themselves out to work at the great fisheries; others, and that the majority, buy the permission to fish for themselves, at seven rubles each canoe for the whole summer. The rent of a cellar for stowing and salting the fish is twenty-five rubles.

The seal-capture, which is carried on by the more opulent part of the astrakhan merchants on the Caspian, is likewise very profitable. The seals are killed in spring and autumn on the islands, where they are immediately gutted and powdered with salt, and then brought to Astrakhan, where they are flayed and the tallow of them is melted. The Astrakhaners by salting their seals immediately on the spot gain this advantage, that the tallow is far cleaner and better than that of the seals taken at Archangel; but in Astrakhan the pood of salt till 1785 cost only ten kopecks. — The fishermen affirm the Caspian to be incomparably richer in seals than any other sea on the russian coasts.

* Pallas, travels, tom. i. p. 283—298.

town of Uralsk by a permanent *utschiug*, so that though the fish come freely out of the Caspian into the Ural, they cannot advance higher than Uralsk. This river has all the kinds of fish that are found in the Volga, excepting only the bream, the red salmon, and a small species of sturgeon. The first and most important capture in the year is in January, with a particular kind of hooks called *bogri*. The second, or the *sevruga* capture, lasts from May till towards the middle of June; and the third, the least considerable, is performed with nets in October. Towards the latter end of the year, or in the beginning of December, it is customary to fish in the secondary rivers and the lakes of the steppe, below the ice, with nets; but what they take is not of much consequence, being only the smaller sorts of fish for home consumption.

Of all the migrating fish the white salmon first comes up the stream, and in March, April, and May, the sturgeon kinds principally advance. The belugas lead the van, then follow the sterlets, and, lastly, during the whole of April come the *sevrugas*, which proceed in the greatest numbers, as the belugas in the fewest. All these fish travel in shoals, but the *sevrugas* in such astonishing multitudes, that, especially near Gurief, the swarms of them are plainly seen under the water, and, according to the affirmation of the Kozaks here, these fish formerly by the powerful pressure of their numbers broke through the wear at Uralsk.

As

As it is a tradition of experience among the Kozaks, that the sturgeons and belugas remain and winter in the river, but the fevrugas travel back to the sea in summer, it is a law with them, that while fishing for fevrugas, which is always in the month of May, to throw into the water again all the belugas and sturgeons that happen to fall into their nets; because in winter these fish when frozen may be transported, bear a higher price, and consequently are more profitable to the community.

The first great fishery in January is chiefly for sturgeons and belugas. These fish in autumn range themselves in ranks in the deep places of the river, where they pass the winter, not indeed without sensation and motion, yet in a continued state of rest. When the season for angling is arrived, commonly the third or fourth of January, a general assembly of the people is held, in which an ataman is elected for this purpose, to whose appointment several aldermen and a yessaul are added; and on these occasions the common Kozaks enter into artels or companies. The interval till the anniversary on which the fishery begins is taken up in getting all the vessels and utensils in proper order; and among these particularly the fish-hooks, which are of a semicircular form, and fastened by the broad end to a long pole. Then licenses with the chancery-seal annexed are given out to all the Kozaks actually enrolled in the service, and not

absent, of which each Kozak receives one, the members of the chancery excepted, who receive from two to four tickets. Kozaks that have been discharged, or are not in the service, may purchase these licenses of others, and thus obtain a right to fish. The day on which the fishery begins, all the Kozaks having tickets of license assemble before sun-rise, with their sledges and implements, at a stated place before the town, ranging themselves in rows and sections according to the order in which they arrive. They are now mustered by the ataman, who diligently inquires whether every Kozak is provided with arms for resistance in case of an attack from the Kirghises; the yeffaul once more exhorts the people to preserve peace and good order; and, lastly, two cannons are fired as a signal for breaking up, upon which every one scampers away as fast as his horse can run, to the district appointed for fishing to get possession of the most advantageous places. Yet no one may presume to break the ice till all are assembled at the river, and till the ataman has given the second signal by firing his musket. The same order is observed every succeeding day as long as the fishery lasts.

Now every Kozak at the spot where he intends to fish makes a tolerable round aperture in the ice; in doing which he is allowed to come as near as he will to another, so that he does not pretend to take two openings into one. In shallow places he
makes

makes use of the short hooks of which he holds one in each hand, guiding it with the point against the current, because the fish when disturbed in these flats usually go downwards. As soon as the Kozak perceives a fish at his hook, he draws him in as quick as possible, and pulls him so high that he can reach him with his hand-hook and bring him on the ice. In deep places it is necessary to use the hook fastened to the end of a long pole, of which on account of its weight every Kozak can only hold one. These being stuck about on all sides, in order to feel for the fish, it not unfrequently happens that two Kozaks catch at once the same fish, which then according to their customs, must be divided between them. — By this curious method of fishing, a man is often so successful as to get ten or more large fish in a day; whereas others will not be able to take so many the whole month through as will defray the expences attending it, or refund the money advanced.

The second large capture of sevrugas is in spring, as soon as the guard stationed at Gurief brings the account that these fish are arrived in the mouth of the Ural, which usually happens in May. The order and ceremonial is on this occasion precisely the same as at the winter fishery; and the elected ataman causes a rope to be stretched across the river, to mark the boundary within which it is lawful to fish. When one compartment begins to get poor in fish, a second is marked off in the

same manner, thus gradually retreating till they come to the mouth of the Ural and into the open sea. The nights are left to give the fish time to collect again in the compartments that have been fished out; and every morning before sun rise, the Kozaks are again present to wait for the signal of the ataman, on which occasion every one strives to place himself as low as possible down the current. The Kozaks while fishing sit singly in little canoes, which commonly are made of the trunks of the black or white poplar, paid over with asphaltus instead of pitch. The nets are between twenty and thirty ells in length and consist of two partitions, one closer wove and somewhat larger so as to make a belly when the farther partition is spread. One end of the net is kept above water by a float of wood, the other end being held by a Kozak, and it is weighed to the bottom by a stone. When it is cast, the fisherman lets his canoe go without guidance with the current; the sevrugas, which swim up the river, slip without resistance through the foremost and wider side of the net, but when they are retained by the hinder and attempt to go back, they remain suspended by their fins. By the agitation from the innumerable nets and canoes, the water is so troubled, that the fish are no longer able to see the nets, and are then ensnared in them in greater numbers. Scared by the noise and bustle of the fishermen, the sevrugas press together on the

lower boundary in the river in such manner, that the nearest fishermen, if they proceed any thing above the mark, are scarcely able to draw what they have caught out of the water.

When this fishery is over, the Kozaks turn to other businesses, make trading journies, and in the latter end of summer look after their hay-harvest. This being done, towards the close of September the autumnal fishery commences, which is opened in the order above described, with great casting-nets, and in which it is permitted, besides the smaller species of fish, to take all sorts of sturgeons. — Lastly, after a respite of a few weeks, succeeds the fishery under the ice in the several inferior waters, but the produce of it is not very abundant.

The largest belugas caught in the Ural weigh often five-and-twenty pood, yielding about five pood of kaviar, but on account of its numerous viscous strings, it is reckoned the worst. The sturgeon are about a fathom in length; the biggest weigh five pood, and frequently contain a pood of kaviar, which is much esteemed for its quality. The fish are here, as at the Volga, mostly salted; kaviar is prepared from the roes, and fish-glue made of the cartilaginous substances; but the winter-fish are transported frozen.

The Yemba and the Terek, which likewise flow into the Caspian, are neither of them very rich in fish; the latter, however, produces sturgeons and

belugas, fevrugas, salmon, barbels, shads, carp, &c. The draught on these rivers affords too little business to demand here any particular account.

The fishery on the Euxine and the sea of Azof, though neither so important or extensive as that of the Caspian, is not deficient in the larger and palatable kinds of fish, among which are particularly to be remarked the various sorts of sturgeon. — The whole northern coast of the sea of Azof, from the Don to Perekop, is laid out in fisheries, to which occupation these districts are extremely favourable. They fish with nets that have in the middle a conical bag, in which the fish assemble; and one single draught, which generally lasts only six hours, yields 60,000 fish, among which however are found but few sturgeons, shads, and other large kinds of fish *. — The most considerable fisheries on the peninsula of Taurida are at Kertsch and Yenicaly, where the capture usually begins in May and continues till sometime in October. Among the most remarkable fish of these waters are the sturgeon, the sterlet, and the suruk †; the two first species are cut lengthwise in pieces, dried and smoked, and sent to Turkey, where they find a great demand. Besides, at these havens, particularly at Taganrok, a considerable quantity of kaviar, train-oil, and fish-glue are shipped off; and in Feodosia they

* Guldenstädt's travels, tom. ii. p. 84.

† *Salmo vimba*.

get excellent prepared roes of the pollard *, but only in small quantities †. The salted and smoked mackarel, called by the Turks *skumri*, are an important article of trade in the Krim, and are frequently sent from Feodosia and Balaklava to Constantinople and to all the maritime towns of Naxos and Romelia. These fish are transported in tons, and a thousand of them are sold on the spot for three and a half or four piastres. The capture of the mackarel, which is done with nets, begins towards the end of summer, and they are loaded off in autumn. We omit the specification of the smaller kinds of fish, which are also in considerable quantities sent away dried and salted ‡.

We are now to speak of the BALTIC, on the coasts whereof a considerable fishery is carried on. The gulfs of Riga and of Finland contain generally the same species of fish, and the employment which the produce of both occasion is nearly equal. The naturalist of Livonia § enumerates in the waters belonging to that province nine-and-forty

* Poutargue. *Salmo thymallis*.

† In the year 1793 all the harbours of the Euxine and the sea of Azof exported :

Fish	6960 pood,	value	10,134 rubles.
Kaviar	23,695	- - -	93,821
Isinglass	6½	- - -	16
<hr/>			
103,971			

‡ Peyssonel's state of the commerce of the Black-sea, p. 176.

§ Fischer, in his natural history of Livonia.

different

different species of fish, among which the salmon, streamlings, pike, and lampreys, if not for home consumption, yet for exportation, are the most important. The salmon is caught in almost all the rivers, but those in the Dvina and the Narova are the best, though they come far behind those of Archangel in delicacy and plumpness; they are exported smoked and salted. The streamlings, a degenerate species of herring, are everywhere found on the shores of the Baltic, but especially about Pernau, where they are in such quantities, that three hundred of these small fish are bought for three or five kopecks; a ton of them when salted costs from three to six rubles. Formerly they were exported; but the northern herrings have annihilated this branch of commerce, which are at present even bought by Livonia, the streamlings being not sufficient for the home and the foreign consumption. Yet instances are not wanting of 300,000 of them having been taken at one successful draught. One species of fish quite peculiar to these waters is the kyllo streamling, a smaller and more delicate variety of the true streamling caught in great numbers in autumn near Reval and Roggervyk. They are pickled, and form a good substitute for anchovies and sardelles, and are accordingly, thus prepared, sent abroad to various parts. Not less exquisite are the potted lampreys that come particularly from Narva.

Narva *. The greatest store of the gulf of Finland consists in sterlets, salmon, and carp; even sturgeon are found in the gulf of Cronstadt, and likewise at times in the Neva. Of the smaller sorts of fish with which the government of Vyborg is provided to a great superfluity, an exceedingly great quantity are brought alive in pierced vessels to St. Petersburg, and there sold cheap at the water-side in the barks which form a sort of fish-market, and others that lie in various parts of the canals. In winter the transport of frozen fish from the remoter parts of the empire is also very considerable †.

Next to the seas that encompass the Russian empire and the great rivers that disembogue into those seas, several **LAKES** in Russia yield a plentiful supply of fish. Among the chief of these is the **BAIKAL**, which is already remarkable for its extraordinary magnitude. The fishery on this lake is prosecuted the whole summer through with large drag-nets, above two hundred fathom long, let down into the water by a strong rope, and may be drawn in again by a windlass. In winter, as soon as the ice is broken up, the best draughts are afforded by what are here called the **DEVIL'S LAM-**

* Hupel's topographische nachrichten von Liefland und Esthland, tom. ii. p. 462—469.

† Georgi's abriss der naturlichen und oekonomischen beschaffenheit des St. Petersburgischen gouvernement, p. 540—543.

PREY'S *, and the LENKI †, which then come to the shallow shore to spawn. But in the summer, when the fish seek the deep water, they can only be taken off the steep coasts where there is depth of lake enough. A primary object of this fishery is the OMUL, with which we are already acquainted from what has been said before, and which in summer croud in great abundance about the southern shore, but in autumn seek the mouths of the rivers on that side. One very remarkable phænomenon of the Baikal is the SEAL, which never uses to remove far from the ocean into rivers, and therefore by some great revolution in the surface of the earth, or by some other extraordinary and rare accident must have been brought into this vast lake. This animal here is of a silver-grey hue, and not fewer than two thousand of them are killed annually.

Still more curious is a sort of fish entirely peculiar to the Baikal, denominated by the russian inhabitants GOLOMYANKA ‡. These fish are of such an oily fatness that they dissolve over the fire quite to the bones. They have never yet come within sight alive; and it is conjectured that they confine themselves to the deepest pits of the Baikal. After violent storms, dead, they cover large tracts of the

* *Salmo oxyrinchus*.

† *Salmo falvelinus*.

‡ To which Pallas has given the name of *Callyonymus Baikalienfis*.

surface of the water, and in some years they are ejected by the lake in such numbers as to lie upon the beach heaped up like a rampart. These aquatic animals, which on account of their disgusting fat are never touched by the gulls or crows, are however subservient to human industry. An oil is extracted from them by boiling, which the Russians sell to the Chinese with great profit *.

Among the other Siberian lakes the Tschan is particularly prolific in fish; but among the European the Ladoga is reckoned the most remarkable in this respect. In it are found not only sturgeons, salmon, the knife-fish, or thin-belly †, &c. but likewise seals; and nearly the like kinds are caught in the Onega. The Peipus yields extremely fat mullets, barbel, pikes, large quobbs, eels, rebs, and others. The rebs, or the marena, is a species of herring, found in several lakes, especially in the Peipus, and they are bought from thirty to ninety kopeeks the thousand. They are consumed either fresh or salted; and, in the latter case, supply with the country people the place of herrings, which are become a necessary. Formerly the fishery on the Peipus gave occupation and bread to 17,000 persons; but since the fishermen have taken to the use of nets with small meshes, by which the young fry are carried away, this supply has sensibly declined. In the lake Ilmen are caught shad,

* Pallas, travels, tom. iii. p. 288—291.

† *Cyprinus cultratus*, PALL. Tschetchon and sabla, in russ.
perch,

perch, mullets, sudak, karafs §, tench, and the beloye; the smaller european lakes are likewise proportionably productive.

We see then from all these facts, that the occupation occasioned by the fishery in the russian empire is great and various, yet it bears no proportion to the produce of the waters. In vain does Nature present her stores in the greatest superfluity, if there be a want of hands to collect her proffered bounty, or if prejudice and indolence contract the spirit of industry. Russia has not only numerous waters that swarm with finny tribes, the products of which are left utterly unexplored, but she imports annually from the foreigner a very considerable quantity of salted fish; a deficiency which might be easily supplied by her domestic produce. The whole amount of what she got by the sale of her fish, particularly the sturgeon, at the foreign markets, was in 1768 no more than 8000 rubles, and in the year 1793 only somewhat above 10,000 rubles. Whereas in the last-mentioned year, isinglas to the value of 452,000 rubles, and kaviar amounting to 188,000 rubles were sent abroad, the exportation of which together in 1768 had amounted only to 120,000 rubles. A better regulation of the fishery at the mouth of the Dniepr might contribute much to the increase of this exportation, as the several kinds of sturgeon are there in great abundance. The same

§ *Cyprinus carassus*.

product

product might also be obtained by the navigation of the Caspian, if fisheries were established at the bays formed by the mouths of the Agrakan, the Kur, and the Svidura, which the Persians, who eat no sturgeons, would easily allow. The mouths of the Yenissey, the Oby, and the Petschora might also be made to yield great quantities of these products, and the transporting them across the sea to Archangel would be attended with no difficulties, as the russians have already at various times visited the coasts of the Frozen-ocean. But it would in a particular manner tend to increase the profits arising from kaviar, if, besides the black roes of the several kinds of sturgeon, the yellow of other large fish were likewise employed to that purpose, as for example that of the pike, the sudak, the carp, the sea-bream, and many other species of the cyprinus, which sport in abundance in numberless streams of southern Russia. The Greeks and Armenians about the Euxine are particularly fond of this yellow kaviar. — The export of fish-oil in 1768 amounted to upwards of 80,000, and in 1793 to above 106,000 rubles. This article of exportation might likewise be greatly increased if the fat of the sea-beluga were more generally employed; and then the whale-fishery ought certainly to be pursued with greater activity and diligence. — According to statements that have been communicated the value of these products, obtained from the fishery and consigned to the foreigner, amounted in

in the year 1768 to 208,000, and in the year 1793 to more than 756,000 rubles.

This rise of the exportation would doubtless lead us to conclude that there was an increase of activity and industry; but the importation has augmented in an equal proportion. In the port of St. Petersburg alone, to the value of above 246,000 rubles in products of the fishery were imported in the year 1793; of which the single article of herrings came to 228,000 rubles, whereas the whole importation of them in 1768 amounted only to 107,000 rubles. As this fish likewise forms in the rest of the harbours of the Baltic and of the White-sea one of the chief articles of importation, it is surely worth while to consider a little on this subject, and to endeavour to find out how this needless and burthenfome expence may be lessened. Besides the herring which Russia herself possesses, and besides the omul, of which notice has been taken in speaking of the Frozen-ocean, that patriotic academician Guldenstædt *, in this view particularly recommends the stream-lings †, the knife-fish ‡, and the chalcoid §, which in taste very much resemble the herring, and are found plentifully in the Euxine, the sea of Azof, and the Caspian. The shad, which at Tscherkask is called seldetz, at Astrakhan shelenitza, and in

* Academical discourse, p. 40.

† *Clupea alosa*, PALL. ‡ *Cyprinus cultratus*, PALL.

§ *Cyprinus chalcoides*, LINN.

other

other parts of the Volga *reba vesselaya*, is very common in the lower Volga as far as the mouth of the Oka, and even in that river and in the Kama, and also in the lower Don. Here they generally swim in shoals, but in the Dniepr they are not in such numbers. The knife-fish, as it is called by the Germans, *tschekon* by the inhabitants of the Volga, and by the Russian *fabla*, is found with the shad in particular places, and is also not unfrequent in the gulf of Finland. The chalcoid passes from the Caspian only into the Terek, and is there called *tschernaya reba*; but from the Euxine they ascend the Dniepr, where they bear the name of *scabria*; and they are not wanting on the coasts of the sea of Azof. This fish by its delicate texture even excels the herring. A better regulated fishery on the coasts of the Euxine and the sea of Azof might yield abundance of other fish of moderate size, which would render the herring not so necessary. The abolition of all monopolies, the low price of salt, and the support afforded by government to every useful undertaking, are sufficient encouragements to the adoption of these proposals, and would assist in relieving the country from a considerable yearly expence:

If we may trust the calculation of an author already several times quoted, the whole value of the produce of the fishery in one year may be

estimated at fifteen millions of rubles.*. Without vouching for the accuracy of this statement, we may admit with great probability that it is not much exaggerated, if we consider the extent of this branch of industry, the diversity of its objects, and the prodigious consumption which must arise from such a number of fast-days among thirty millions of people. But the greater the demand for this kind of food, so much the more would it repay any pains that might be necessary for discovering the defects that have hitherto stood in the way of the best and fittest means of supplying it, and which are only cherished by sloth and prejudice. With a great part of the russian peasantry fish is a prime necessary of life, and the consumption of it is in many places greater than that of flesh-meat; which, partly from a less inclination for it, and partly from the rites of the church, is but in very little request with the nation at large, when compared with other countries. Nothing then would be more meritorious than to eradicate that baneful prejudice which the common people of Russia entertain to this day against several wholesome and palatable kinds of fish that abound in such multitudes as to supply the greater part of the nation with food. Of the shad, for instance, which from the beginning of May to the end of summer travel up the Volga in amazing shoals,

* Herrman statist. schild. von Russland, p. 456.

the

the vulgar have the foolish and ungrounded notion, that it renders those who eat of it mad; of course it is never eaten by the Russians, but either thrown away, or disposed of at an extremely trifling price to the Mordvines and Tschuvasches, who by their daily experience refute the idle notion. It is, moreover, well-known to be a fish which bears salting and smoking excellently, and would prove a great relief to the lower orders if they could be persuaded to lay aside this incomprehensible prejudice. The tschechon is likewise very little esteemed, and only eaten from necessity by the very poorest of the people. Lampreys are in the same unfortunate predicament, which are plentifully found in the Volga; and crabs are in utter abhorrence with the country people, which they only learn to conquer when they come into large towns*.

The fishery at the mouths of the rivers that fall into the Caspian is of such consequence that it is much to be wished some alteration were made in the manner wherein it is conducted. The utshiugs were contrived by the astrakhan Tartars, to whom it being naturally a matter of very great indifference whether by these weirs they stopped up the passage to the fish in their migration to the superior regions of the rivers, they might perhaps invent them on purpose to deprive the Russians of the benefit of so rich and perpetual a source of livelihood. Now,

* Pallas, travels, tom. i. p. 132—134.

that the Volga and the Ural, from their heads to their other extremities flow only over russian territory, it would be but just and equitable to destroy that memorial of the Tartars, and to let the upper inhabitants of these rivers participate in the enjoyment of the valuable kinds of fish, of which there would be far more throughout Russia if the passage from the Caspian were not so entirely stopped. The use of nets too might be prohibited, or at least confined by certain restrictions, because a sufficient quantity of fish might be caught by angling, and because the nets prevent the sturgeons, barbels, salmons, and belugas from going up the stream, and frequently compel entire shoals of these fish to go back into the sea*. — But, when the patriotic observer forms his projects he has only the benefit of the whole in view; it behoves a just and prudent government not to lose sight also of the advantage of the individual, and to make the claims of all upon the general welfare coincide with the rights of each.

* Oseretzkofikoi's beschreib. von Astrakhan, &c. p. 103.

SECTION III.

The Breeding of Cattle.

THE third division of productive industry comprehends the BREEDING OF CATTLE, a business which in the russian empire is pursued in a variety of ways. In the several regions where agriculture is the prime source of livelihood to the inhabitants, the breeding of cattle can only be considered as a collateral branch of rural œconomy; but with those tribes who confine themselves solely to that employment, it obtains the character of a mode of living, and by its influence on the social and moral condition of mankind, is at the same time a subject for the history of the progressive culture of the human race. On the scale of civilization the herdsman stands above the fisherman and the huntsman, as his state is more permanent, and leads him from a rude and laborious to a milder and more commodious way of life. If the chase or the fishery more quickly expand the natural and intellectual faculties of man, the pastoral life binds him more to the soil on which he tends his droves and inspires him with that sociability which is the germ of civil conjunction. The lonely huntsman may easily dispense with the advantage for which in society he barter the loss of his natural liberty; he is contented with an imperfect

connexion with other men to promote a single end, which immediately ceases as soon as that end is obtained. But seldom shall we hear of a pastoral people that without a social constitution attained to any duration and grandeur; a manner of life which cannot subsist without security of property, nor be accomplished without reciprocal aid, conducts men soon to the only method of ensuring to themselves these advantages; and when they have once adopted it, they push forward on the line of improvement with infinitely greater speed than the fisherman or the hunter, whose talents and capacities are only exercised on the resistance or the cunning of brutes.

The nations of herdsmen in the russian empire are the Kirghies, the Kalmuks, the Baschkirs, the Burats, and several others less numerous; the breeding of cattle is a principal trade with the Kozaks of the Don, the Nogayans, the Barabinszes, and some others; with most of the nations of hunters it is a very considerable collateral means of profit, and as an important branch of rural œconomy it flourishes in many districts of proper Russia. On the whole, the business of the grazier is prosecuted in the russian empire to a greater extent, but also far more negligently than in other countries of Europe. Without reckoning the great droves from which the nomadic tribes derive their support and their wealth, almost every boor, even he who is accounted poor, has his little cow-house, and even the beggar, who literally
lives

lives upon alms, is generally, however, possessed of a cow or a goat. But if we except the small number of enlightened husbandmen, and the colonists and burghers in some provinces, it cannot be denied, that the breed of cattle is almost everywhere very carelessly managed; and that the culture of this important branch of industry in general, notwithstanding so many natural advantages, is still far short of its perfection. As we shall have occasion in the sequel to touch more closely on the peculiar excellencies and defects of this business among the Russians, we shall here omit the general specification of them, in order at once to make ourselves acquainted with the main objects of the present article.

The foremost of these in the Russian empire is the NEAT-CATTLE, the culture of which is of the utmost consequence both to home consumption and to foreign commerce. Almost everywhere, where the climate and the soil are favourable to this branch of husbandry, large droves of horned cattle are kept, and the chief wealth of many of the nomadic tribes consists in these useful animals. The malo-Russian and newly-acquired Polish provinces particularly possess a superfluity of them, especially the former Polish Ukraine; also in the regions of the Don and in the governments of Kharkof, Kursk, Orel, Kazan, Ufa, Saratof, &c. as well as in several governments of the northern territory, they abound in such numbers as to admit of exportation; and the Kirghises,

hises, Kalmuks, Baschkirs, and several branches of the Tartars even supply a great part of the empire with this necessary. From the Ukraine not only some thousands of live oxen are every year driven to St. Petersburg, Riga, and Reval, but even to Silesia and Germany. In many regions of this favoured country the breed of cattle is far superior to the agriculture, and the land-owners there make more account of oxen than of horses, as they use the former at the same time for draught. In what was formerly Little Poland, the breeding of cattle is favoured by the uncommonly rich pastures, on which the grass grows so high that the grazing beasts are frequently concealed in it to the very horns. The podolian oxen have long been famous among the graziers of every country, and if the fraudulent tradesman did not sometimes attempt to sell foreign horned-cattle under this name, we should justly be astonished at the fertility and abundance of that province. With the Kozaks of the Don the breeding of cattle is a primary business, and their fine horned-cattle, in no respect inferior to the malo-russian, find excellent pasturage in the grassy steppes and on the banks of the rivers luxuriant in the choicest herbage. The nurture of them is so much facilitated by the short and mild winter, that individuals among the Kozaks possess khutores or farms, on which are fifty to two hundred head of horned cattle. In the government of Archangel, particularly in the southern

southern circles, the breeding of cattle is carried on with great success: The fine cattle of Kholmogor, known over all the north of Russia, attained that high degree of excellence by the wise measures of the late empress, who upwards of thirty years since caused a breed of dutch cows to be distributed among the inhabitants of those fertile meads. The calves of Kholmogor are in particular esteem for their excellent veal, and are brought in large numbers to St. Petersburg, where they are sold to great profit. The fattening of them indeed takes up forty weeks, but then one such calf will weigh 680 to 800 pound. The far greater part of all the governments breed a sufficient quantity of horned cattle for their own consumption, and many of them dispose of their superfluity to the poorer provinces. Among these the two governments of St. Petersburg and Mosco stand foremost on account of their great population and the disproportionate consumption of their capital towns. The breeding of cattle in the government of Mosco is by no means inconsiderable, and yet a great number of horned-cattle are annually brought in. In that of St. Petersburg it can be but scanty by reason of the unfavourableness of its local situation, especially as the oxen here are not used for draught, and as the calves are bought up as luxuries for the table; yet every boor keeps a few cows, as they bring him

him good returns. Live oxen fit for slaughter and frozen beef are brought hither every year from the Ukraine and from the Kalmuk-horde, a distance of more than two thousand versts; and, besides the calves which this residence receives from Archangel, considerable numbers of them come from the upper and the middle Volga. As these beasts by the long way they are obliged to travel commonly lose much of their fat, the farmers in Livonia and Esthonia take them into feed the winter through; whence arises to these provinces a regular and important branch of trade. Many a proprietor keeps in this manner at his distillery three hundred head of oxen; by each of which he gains from eight to fourteen rubles, besides the benefit of their labour in cultivating his corn fields.

Neat-cattle with almost all the pastoral nations compose the least part of their stock, as the breed of horses and sheep is their principal object. The Kirghises have fine unhorned cows; among the Kalmuks only the poorer sort keep horned-cattle and horses in equal number: the opulent herdsman usually possesses far more of the latter. All the kalmuk herds remain the whole winter on the steppe, and nevertheless thrive well. The chief wealth indeed of the Nogayans consists in beeves, but this sluggish people are so poor, that the owner of five hundred oxen passes for a very rich man,

man. In general the breeding of horned-cattle is the most attended to by those nations who make use of them for draught and as beasts of burden.

The method in which the breeding of neat-cattle is carried on in Russia, differs immensely from that pursued in other countries of Europe. What was before mentioned of the defects of cattle-breeding in general is particularly applicable to this branch of it; for nowhere can carelessness in the management of these beasts be carried to greater lengths than here. Immediately as the snow is melted from the ground, the horned beast must seek his own nourishment, on frequently very poor and distant pastures, and from this period he is not to expect a handful of provender at home till the winter again renders it impossible for him to graze. In that season indeed he is foddered in the stall, but so penuriously that his bones seem ready to start through his hide, and he frequently cannot raise himself without the help of his keeper, as not seldom dry straw and cold water are the whole of his nourishment. Only the cows when they have just calved receive a little hay and meal, and yet they suckle their calves, and here and there, e. g. in the provinces of the Baltic, yield during the summer forty pounds of butter and more. Even the practice of foddering and having warm hovels is not in use though in the most woody districts, and to all these deficiencies, so baleful to the prosperous nurture of cattle, must
3 still

still be added, particularly in Siberia, frequent distempers.

It is scarcely necessary to remark that this description only in general holds good; and that particular districts, as well as particular farmers, form many advantageous exceptions to it. Yet for the fault that is in general so striking, some apologies are to be found grounded in the physical and civil state of the russian empire, and against which little or no reply can be made. The proper feeding, for instance, with such large droves as are in Russia, is perhaps not practicable; in the governments where the rearing of cattle is pursued not as a principal trade but only as a collateral branch of husbandry, it might certainly be more general; but in these there is no want of diligent countrymen who take great care to fatten the neat-cattle. In this regard the governments of Riga, Reval, and St. Petersburg have been already brought as instances, and besides these several others might be named. The herds of the nomadic nations fatten themselves on the rank steppes, and industrious peasants in many parts of the empire follow the grazer's business as a trade or for their proper use. Careless country-people and herdsmen indeed leave their cattle to seek their provision during the winter under the snow, especially in such parts as feel a want of fodder; but who can blame them for it, when it is considered that the low price of cattle affords the owner but a very moderate

derate profit, and that this circumstance jointly with the total want of a demand, or the difficulty of obtaining a vent for them, holds out no encouragement to care and laborious attendance. — The arguments brought against common pastures and for their inclosure, as well as for house-feeding, may be completely justified in other countries by experience: but they do not everywhere, except under certain limitations, suit the Russian empire, in which are excellent pasture-grounds in abundance, but proportionately few people. The short summers in the northern districts may be employed in more profitable occupations than hay-making, as the multitude of field labours scarcely allow time to the inhabitants of the country to gather in their miserable crops. The richest common pastures consist of monstrous large steppes, the partitioning of which would be attended with infinite difficulties, and how could the nomade without the use of them maintain his droves which he numbers by hundreds and thousands, and which must be attended without hired people? These and many other circumstances here unnoticed shew that the methods of breeding of cattle in England, Germany, and Holland can only be very conditionally applied to Russia. With all the real or imaginary defects to which it is here exposed, it however affords the inhabitants many and in some districts all the means of livelihood, and yields
5. besides

besides to commerce a multitude of important products for exportation*.

Here first present themselves to our notice hides and tallow, two main articles of russian commerce. Of the latter in the year 1793 above 1,035,000 poods were exported, and the value of that quantity amounted to 4,279,000 rubles, not including the tallow-candles, the exportation of which came in value to 170,000 rubles. Yufts and leather in the same year were shipped off to the amount of 2,249,000 rubles, and the other exports in the products arising from the breeding of horned-cattle, as live oxen and cows, salted beef, tongues, and butter, made a sum of more than 163,000 rubles. The whole value then of all these articles in one year was upwards of 6,862,000 rubles, for the most part, or entirely gained from the breeding of neat cattle, and in which the wrought-up materials, as soap, &c. are not mentioned. So astonishing an exportation as this confutes all theoretical objections, which entirely lose their force if we observe the rising proportions of the exports we have just been naming†.

Yet, great as the benefit is which Russia receives from this branch of her industry, it is not to be

* Hupel's staatsverf. des. russ. reichs, tom. ii. p. 250—517.

† In the year 1768 Russia sold to the value of 1,115,000 rubles in hides and leather, and tallow amounting to 750,000 rubles. The surplus of the exportation of these two articles amounted in the year 1793 to 4,563,000 rubles.

denied

denied that it might be greater. All the districts that are adapted to the breeding of cattle are not by far employed to that end ; this may particularly be affirmed of the spacious plains of southern Russia in which very numerous herds might be supported with the utmost convenience. The breeding of neat-cattle would be the properest employment for the scanty population of those districts where the pastures are richly furnished with spurry and golden-clover, and the winters are short, and where the salted beef, by the navigation of the Euxine, might find an excellent market at Constantinople*. Such an increase of the horned-cattle would likewise augment the production of hides and tallow, which at present is insufficient for the demands of the foreigner, and the preparation of these articles would be so much the more facilitated, as the former imposts on tanneries and tallow-melters have been abolished since the year 1775. — An important object of national concern is also the increase of the buffalo, of which there are already considerable numbers in the governments of Caucasus, Ekatarinoflaf, and

* We are assured by professor Pallas, that a good beginning has already been made with this increase on the island of Taman, and in the confines of the river Yey. The Kozaks of the Euxine have introduced here the large ukraine race of horned-cattle, which thrives so excellently that the new breed will shortly excel their parents, and bid fair to become in time a great relief to the capital towns. *Tableau de la Tauride*, p. 43.

Taurida, where the breed of them ought to be encouraged by all possible means. This animal is not only much stronger and better calculated for labour than the ox, but his hide forms an important article of commerce to Smyrna, and yields the best materials for sole-leather, which Russia annually imports. Cheese likewise made from buffalo's milk is excellent; and it would be well worth while to make this commodity in the country, rather than continue to pay considerable sums for it abroad *. — By the introduction of the tangutan horned cattle † the ruffian breed might likewise be considerably improved. This beast, who lives wild in the soongarian mountains, and is a domestic animal in Thibet and the Bukharèy, affords good beef, yields a good deal of tallow, and gives plenty of rich milk; their calves are easily tamed, but the full-grown refuse to mingle with the common herds. This species might even become a domestic animal in the lower regions of the Don and about the Terek, or perhaps may be so already, if according to the supposition of Pallas, the buffalo which is kept there be only a degeneracy of the tangutan neat-cattle or become more domestic ‡.

* Guldenstädt's akademische rede, &c. sect. 22—38.

† Bos grunniens.

‡ Falk's beytrag, tom. iii. p. 293. Acta acad. Petrop. ann. 1777. tom. ii. p. 10.

The BREEDING OF SHEEP is in the russian empire proportionably much greater even than that of neat-cattle; but this department too of productive industry is far short of that perfection, to which, by nothing more than an enlightened guidance and a more active exertion of the art of husbandry, it might attain. Almost everywhere the attention is only directed to increase the breed of this useful animal, without thinking of its improvement, and the immense pastures of Russia that are covered with flocks of sheep do not supply wool enough to enable the country to dispense with the importation of that necessary and most common material of manufacture. Yet the nomades are richer in sheep than in any other species of cattle, and even the boors and Kozaks in southern Russia and Siberia possess flocks of hundreds and thousands. The ordinary russian sheep, particularly in the northern regions, are not very large, are short-tailed, and bear a coarse and harsh wool, which however is sometimes intermixed with finer; some few provinces are an exception to this, in which attempts have been made to improve this species by crossing the breed with better races and by greater care and attendance. The long-tailed tscherkassian sheep, kept by the Kozaks of the Don and in some districts of the Ukraine, yield a better wool: as also do the breed found in the governments of Kharkof, Kursk, Orel, Tambof, Kazan, and some others from which

which the greater part of the wool for the inland cloth manufactories is fetched. The attempt made by Peter the great to improve the malo-russian flocks by silesian sheep and goats has not been attended with any great consequence; however the beneficent views of that prince have succeeded better in the present government of Viatka, where german breeds are still kept by german shepherds. The owners of estates likewise in the provinces of the Baltic cultivate at least for their domestic consumption a better race; but this breed thrives excellently on the islands of Oesel and Dagho, where the abundance of nutritious herbs and the salt sea-water are liked by them. The species found on the last-mentioned island yield a wool in equal estimation with the english, and the half-cloth which the land-owners there weave themselves is frequently finer and of a closer substance than what usually comes from abroad. In the white-russian governments they seem to have fallen upon a better method of culture; and it is hoped that the success which has attended some folds of foreign races will operate as an encouragement to the farmers of those parts. Lithuania and Little Poland have for a long time past delivered a considerable quantity of half-fine wool for exportation, and in the governments of Ekatarinoflaf and Vosnesensk the pasture of sheep forms a main branch of sustenance to the inhabitants. Taurida is so rich in sheep, that common Tartars possess
1000,

1000, and rich ones 50,000; and at the first enumeration, notwithstanding the preceding war, there were found to be upwards of seven millions of that animal on the whole peninsula. Their mutton is every where of excellent taste; but in regard to the quality of their wool, it is very different according to the several places in which they have been reared. In the plains they are larger; but here they have a coarse wool mixed with hair; whereas the lambs of this species give a curled fur of such value that the sale of them alone forms an important branch of trade. The sheep in the mountainous part of the peninsula are indeed smaller, but they bear a long, even, silky kind of wool, which, if this race were crossed by foreign rams, must in quality be at least equal to the english *.

The kirghisian and kalmukian sheep, which with the horse compose the principal wealth of these nations, are entirely different from the russian. The former in size and ugliness are not excelled by any wool-bearing animal; they are higher than a new-born calf, and so strong and heavy, that the full-grown usually weigh between four and five pood. In shape they resemble the indian

* Statistische uebersicht der staathalt. des russischen reichs. Aufwahl oekonomischer abhandlungen der freyen oekonom. gesellschaft in St. Petersburg, tom. i. p. 205. Friebe. bemerkungen ueber Livland und Esthland, 157. 298. Pallas, tableau phys. et topogr. de la Tauride, p. 41.

sheep; they have the arched front of the old battering ram, prominent underlips, and large pendulous ears. Instead of a tail they have a monstrous round lump of fat like a cushion, weighing between thirty and forty pound, and yielding between twenty and thirty pound of tallow †; by this excrescence they are generally distinguishable from the indian sheep. Their wool is coarse, entangled together and strongly mixed with hair: the rams are universally and the wethers generally horned; some are even seen, like the icelandic, with four, five, or six horns. — These sheep the whole winter through seek their own fodder under the snow, which at the same time serves them for drink, without becoming lean upon it. To this the shortness of that season much contributes, as well as the circumstance that the snow passes away more rapidly on the salt-places of the steppes, and the animals are in a manner fattened by feeding on the vegetables of the saline soil. It may, perhaps, be owing to the same circumstance that this oriental race of sheep is become gradually de-

† Wild rove the flocks, no burdening fleece they bear
 In fervid climes: Nature gives nought in vain.
 Carmenian wool on the broad tail alone
 Resplendent swells, enormous in its growth:
 As the sleek ram from green to green removes,
 On aiding wheels his heavy pride he draws,
 And glad resigns it for the hatter's use.

DYER'S Fleece.

generate

generate among the Kirghises by the superfluity of fat, and instead of a tail have got the clumsy fat lump; which, being now become inveterate, they retain even in other countries. The kirghisian sheep generally bring forth two lambs; and, as they live in the steppes entirely left to nature, and are consequently visited by no diseases, they multiply exceedingly, and the flocks of the Kirghises are therefore very numerous. — The kalmukian sheep differ from the kirghisian in their smaller size; they present likewise not so curved a front, lesser though pendulous ears, a less hairy wool, and are seldom horned. This race is kept up also among the baptized Kalmuks, who live among the Russians, as in all places where there are kalmuk rams, and where the flocks graze at full liberty, and even in winter are left to nibble the snow without watering them *. As it is scarcely to be hoped that the Kalmuks will accommodate themselves to agriculture with a good will, the easiest and most natural method of making these people useful to the empire, at least such as are converted, would be to introduce among them, instead of their wretched sheep that are only fit for slaughter, flocks of a good breed, and try to encourage this pastoral nation to the shearing of wool.

The polish colonists in the selenghinskian circle of the government of Irkutsk keep a number of

* Pallas, travels, tom. i. p. 325. 398.

sheep of mongolian race, with little fat tails, but are not much larger than the russian. Many of the lambs that are dropped here have fine curled furs, which are sold to the Chinese dearer than the famous bukharian. It is the practice with the Poles to wrap up the new-born lambs in linen, which they moisten every day with warm water, and in this state leave them for a fortnight or a month under the mother, till the tender wool be crisped into little curls. These lambs are immediately killed when the wool is fine enough *.

As the management of sheep in all countries forms so material an object of political œconomy, it will not be improper here to make a few observations on the means by which this branch of the national industry might be assisted and promoted. In this we must look either merely to the augmentation of the numbers of the flocks, or at the same time to the improvement of the wool. In Russia the latter ought to be particularly the care of every enlightened and patriotic landlord, as the quantity of sheep seems to be sufficient for the present state of population and the national industry. Yet in this too the national wealth might be greatly increased; among the tracts of land that are conspicuously adapted to this culture, the mountainous steppes along the Sok and the Kinel hold a distinguished place. Even the ordinary russian sheep are here much larger and acquire a

* Pallas, travels, tom. iii. p. 168.

cleaner

cleaner wool *. The gentle elevations, likewise, of the valdayan ridge of mountains and the southern uralian and altayan chain, as well as the high and saline ground of Caucasus, Ekatarinoflaf, and Taurida are in a singular manner adapted to the multiplication of this species of animals; and in the last-mentioned province the exportation of the salted flesh so much admired by the Turks would be likewise increased †. — But the most material object of attention is the improvement of the inland wool, a product which Russia imports annually, raw and wrought, in so prodigious a quantity, that the surplus of the commerce is very much lessened by it ‡.

From the experiments of a sagacious practical landlord §, who works up the wool produced on his estate, genuine russian sheep, unmixed with foreign races, besides the coarse hairy wool, yield a fine silky sort, which with young or full-grown sheep is equally fine and serviceable with the wool of spanish sheep. The malo-russian border near

* Pallas, travels, tom. i. p. 97.

† Guldenstädt's akademische rede, &c. p. 36.

‡ In the port of St. Petersburg alone, the importation of woollen articles in the year 1794 amounted to above 3,114,000 rubles. — Yet of the russian wool no inconsiderable quantity is every year shipped off. In the year 1793 this export was 23,797 pood, the value whereof was rated at 45,805 rubles.

§ Lieut. Col. Ofotkin on the improvement and increase of the russian wool for fabrics. Aufwahl œkonom. abhandl. tom. iv. p. 145.

upon it; but as the filky wool from all these sheep is superior in softness, it is at least preferable to the turkish and polish. According to the statement of the abovesaid land-owner, it is therefore of not so much consequence to improve the russian sheep by foreign races as to separate the filk-wool by carefully cleansing it from the hair-wool, since the former as it is, and without mixture with foreign kinds of wool, is a very useful material for the weaving of cloth. But because there is a great difference even among the russian sheep, it would be not less important, to employ the best kind of them especially to the multiplication of this breed. This difference appears not only in the greater or smaller proportion between the filk and the hair-wool, but also in the different lengths of them. A wool in which both are of equal length may be easily separated by culling out every hair apart; but the profits on this product would not correspond with the expence, and as little would this employment repay the trouble, if the quantity of the filk were too small in proportion to the hairs. — The best kind of russian sheep are in the southern regions of the Kama and in the territory of Kazan. Here the wool of this animal possesses every quality requisite to the being wrought into the cleanest and finest filk wool; with young grown sheep this grows about the neck and on the breast without any mixture with hairs; and even in regard to growth

growth the sheep here are larger than usual in other russian provinces, as in this respect they are nearly equal to those of the Ukraine.

But, though this russian wool, after a careful separation, be proper for weaving cloth, yet it is not fit for fine, unfulled stuffs, as camblets, chalongs, and the like, for which there is no doing without the fine long wool of foreign sheep, particularly the spanish. The introduction and propagation of these foreign races is, therefore, a very desirable object in the general improvement of the country, to which, besides the reasons already given, may be added this circumstance, that by that means the production of this indispensable commodity would be greatly increased. A good spanish sheep of large growth yields four times as much fine wool as the best russian will afford by the most careful sorting.

For the transplantation of foreign races into Russia the english and the spanish breed, which have already been naturalized in Sweden and Germany, will be found to be the fittest. The genuine spanish and english wool is only of use in making fine stuffs; from their unctuous quality they cannot well be employed in weaving stockings and stuffs, and as the climate of Sweden and Germany comes nearest to that of most parts of Russia, these races, already enured to the northern skies, would hold out and thrive the better here. Besides, the price of these animals in those countries is

is far lower than that they bear in their proper native country. The principles on which such a transplantation should be effected are delivered in a very instructive manner by the æconomical society of St. Petersburg, and by the writings of that useful body are brought into circulation throughout the empire*. In the remoter governments, where the introduction of foreign kinds of sheep would be attended with too many difficulties, the native species might be improved by greater attention and care. The miserable state of sheep-breeding in Russia is owing certainly in some measure to the severity of the climate and the bad pasture grounds. But in far the greater number of districts it is the neglect of proper management that lessens the value of these animals and their products.

GOATS are a very common domestic animal not only with the Russian country-people, but also with the nomadic nations, though the herds of them are but small in comparison with those of other kinds. The goats of the Kirghises are of a singular figure; being mostly unhorned, prettily hung with long hair, generally variegated in spots, and having pendulous ears. They are only kept for their milk and their furs. The Kalmuks likewise have goats among their herds, but in no

* Besides the before-mentioned tracts, see particularly the prize-paper: von der Schaafzucht in Russland, in the Auswahl ækonom. abhandl. tom. i. p. 293.

great number; they are entirely like the kirghisian. — As the fur of these animals is profitably manufactured, and partly even exported, the breed of them is no insignificant object of traffic. It would be of more material consequence to industry if the goat of Angora, whose shaggy hair, partly spun, and partly wove into stuffs and stockings, forms a considerable article of importation, could be gradually propagated in Russia. These animals are natives of Natolia; it would therefore be no difficult matter to bring them over the Euxine, and it is highly probable that they would thrive excellently in the elevated pastures about Taganrok, Mosdok, &c. Considerable profit might likewise be derived from the hitherto unemployed flue or down-wool which the goats in Taurida shed every spring, and which might be got in the winter by combing without any trouble. This down, which for fineness and elasticity exceeds the very best wool, is the chief material of which the costly shawls are wove which are obtained from Kachemir and Thibet. This raw material would find an easy sale in England, where it is in much request and fetches a higher price than silk*.

A very useful object of russian farming is the HOG, whose consumption is everywhere extraordinarily great. Though there is such good feeding for this animal either in the forests and on the fat

* Guldenstädt's akadem. rede, p. 37. Pallas, tableau de la Tauride, p. 42.

meadows,

meadows, or in the cow-yards and distilleries, yet they never grow to any considerable size, which perhaps is to be accounted for from the climate. In winter the frozen pork and bacon are a main article of food in the northern districts, whence it is also transported to parts very remote. — The bristles constitute an important article of exportation; in the year 1793, for example, to the value of 742,000 rubles of them were shipped off.

We pass by the other species of common domestic animals and poultry which serve only as eatables and are reared for inland consumption alone. A more remarkable and interesting object invites our attention, the BEASTS OF DRAUGHT AND BURDEN, of which there is a great and curious variety in the russian empire.

The most common as well as the most useful animal of this class is the HORSE, a creature that by its strength and patient fortitude, under every region of heaven, seems destined to mitigate the effects of that curse which the levity of the first mortal is said to have drawn down upon his whole posterity. With almost all the nations of the earth this animal is the plodding participator in the labours of agriculture, the faithful and bold companion in the sports of the field and in the perils of war; and in the refined nations of our quarter of the globe is become indispensable to the purposes of convenience and luxury. The russian empire produces and feeds great numbers of them;

in the vast and fertile steppes, which human penury or avarice have not yet made tributary, they still live in the primitive state of nature, in perfect freedom; and even among the nomadic tribes, where they are collected in whole troops, their servitude is as light as their slavery in polished countries is commonly great.

In the proper russian provinces this breed is so general, that we seldom see a peasant, however poor his condition, who does not possess a horse or two; and, excepting in the Ukraine, this animal is universally employed in the works of the field. It is somewhat curious that the genuine russian horse, notwithstanding the great diversity of climate, of nurture, of attendance, of provender, &c. is almost everywhere uncommonly alike; have all ram-like heads, long and meagre neck, a broad breast, and are very compact. There are excellent runners among them; they are indefatigable and hardy, but not handsome, and withal extremely obstinate and shy. In several regions of the empire this native race has been ennobled by foreign stallions, and the governments of Mosco, Tambof, Kazan, Simbirsk, with several others, produce large, beautiful, and strong horses. — Lithuania has always supplied the cavalry with this necessary; a good kind of poney is found in the district of Archangel, and for their fleetness and lasting powers the livonian nags are very famous; but the genuine breed of them begins to be scarce.

The

The tartarian horses are of such known excellence, particularly for the use of light cavalry, that this species needs here no farther description. But the improvements that have been made in Taurida in some of the studs by the commixture with turkish and arabian horses, so as greatly to improve the native breed, deserves to be particularly noticed. The race which the Kozaks of the Euxine have introduced into the isle of Taman and along the river Kuban will far excel the tartarian. The caucasian horses are but little inferior to the arabian in regard of beauty, spirit, and docility, but the bukharian pye-balls will dispute the palm with them in regard to the first of these advantages*. — To these mostly native races, the catalogue of which might be easily lengthened, may still be added some foreign breeds, particularly the danish and english, the propagation of which is greatly attended to in the numerous studs belonging to the crown, and in those of wealthy landlords†.

Among

* Falk's *Beytrag*. tom. iii. p. 290. Pallas, *travels*, tom. i. p. 61. 74. 140. Hupel's *topogr. nachr.* tom. ii. p. 247. Pallas, *tableau de la Tauride*, p. 41. *Russia: or a complete Description of all the Nations, &c.*

† Of the governments in which the breeding of horses is principally attended to, or where they are kept in studs, the principal are Mosco, Kharkof, Kursk, Orel, Nishney-Novgorod, Simbirsk, Tambof, Voronetch, Kief, Ekatarinoflaf, Vosnesensk, Bratzlau, &c. Formerly the large horses for the cavalry were fetched from Prussia, Denmark, and other countries; at present they are taken out of the studs or brought
up

Among the nomadic tribes the Kalmuks, Kirghises, and Baschkirs possess the greatest numbers of these animals, doubly necessary to them in their rambling mode of life. The kalmuk horses are high, light-limbed; and, though not beautiful, are not of a disagreeable form. In point of fleetness they by no means yield to any other species; but they are not serviceable as draught horses, being deficient in force, and by far too furious. Being accustomed only to graze upon the steppes, it is not possible in general to succeed with them without regular foddering, but it is difficult to make them take to it; and there is great hazard that, in proportion as their strength increases, their furiousness should also increase. There are Kalmuks who possess several thousand horses; most of the stallion-colts they make into geldings, but the stallions are never kept apart from the mares, that the proprietor may at no time be in want of milk. — The horses of the Kirghises differ but little from those of the Kalmuks, yet they are usually of somewhat higher growth. Also in impetuosity and fleetness they are equal to the latter, and likewise accustomed to scrape up their fodder the whole winter through from under the snow. They are divided into troops by their owners, to each of

up in the country. A russian cavalry horse must not, according to the difference of the corps, be under two arshines two vershoks, or two arshines. In some of the cuirassier-regiments we may see horses two arshines five vershoks in height.

which

which is assigned only one stallion, who plays the shepherd as it were over his flock. — But among none of the nomadic people are bred better and larger horses than by the Baschkirs, particularly those who dwell eastward of the Ural along the river Iset. The noble herbage of the steppes in these regions affords such encouragement to the breeding of horses, that many individuals among the Baschkirs possess from two to four thousand of these animals. The horses here are doubtless very fine, yet the excellent pastures would greatly improve their species, if these shepherds did not deprive the colts of the mare's milk which they convert into an intoxicating liquor, and if they were not too lazy to provide a sufficient winter stock of hay, as the poor beasts in spring, when the melted snow freezes again, are almost destitute of food*.

Amidst all this actual superfluity which Russia possesses in horses, the importation of these animals yet forms no inconsiderable rubric in the custom-house lists of the Baltic-ports. In St. Petersburg alone are brought in of them annually to the amount of 120,000 to 130,000 rubles; to what then may it not amount through the whole country? If, however, only the half of them were adapted to improve the native breeds, this estimate would require no animadversion, as the benefit that might thus accrue to Russia would

* Pallas, travels, tom. i. p. 325—396. tom. ii. p. 75.
far

far outweigh the disadvantages arising from a luxury easily pardonable as proceeding from a useful taste.

It would be difficult to point out a people that understand how to manage horses so well as the Russians. Almost every boor is at once carter, driver, and horseman; and the care of the post, as well as the vehicles for the purpose of conveyance, constitute a primary business and an important branch of gain to the country people in most districts. In the common Russian the love for his horse forms a curious contrast with his severity in the treatment of him. Accustomed himself to harsh demands, he never fails to make the same upon his horse, and in case of need to enforce them with unmerciful severity. The rapidity with which they travel in Russia is become proverbial even in other countries; but when we are informed that the post-stations here are very far asunder, and that it is exceedingly common to pass two or three of them with the same horses with unabated speed, we may reasonably be astonished at the sturdiness of the Russian horses and the insensibility of their owners. In the hard works which usually fall to the lot of these animals, their provender is often very scanty, and on violent exertions in performing a day's journey, a bit of black bread or a hard biscuit is their only refreshment. But the Russian likewise knows how much he can put upon his horse, without entirely exhausting his strength,

and the providing for his health and attendance is of the greater consequence to him as frequently he is the whole of his property.

The cattle of the nomades consists chiefly in horses, as most of their necessities are supplied by this animal. They obtain from them not only meat, milk, and cheese, but even spirituous liquor, skins for their clothing, sinews for sewing, &c. In these large droves the horses are mostly half-wild; they keep together in troops, each of which having several mares under one, at least one paramount stallion, who seems the guardian and protector of the whole multitude, keeps the droves together, is attentive to every danger, notifies it to them by neighing, and in case of extremity, while the drove press quietly together, goes forth to meet the foe, and begins the fight in defence of the company under his protection *.

There are districts in Russia where this serviceable species is even found WILD; though probably the horses running about at large in the donskoi, the uralian, and the barabinzian steppes do not form a peculiar race, but have arisen from strayed stallions belonging to the pastoral nations, who have either seduced single mares or whole droves, and propagated in the uninhabited wildernesses. In their present savage state, though they resemble on the whole the little russian horses, yet they have thicker heads, more pointed ears, a short

* Falk's beytr. tom. iii. p. 289.

curly mane, and a shorter tail. Their ordinary colour is light bay, others are rare. They associate in companies from five to twenty together, usually consisting of a family of one stallion with several mares and colts. When the young male colts are grown up, the old stallion drives them from the herd, following them however, for some time till they are strong enough to get themselves a retinue of young mares. These wild horses keep the whole year round to the well-watered mountainous steppes; in winter seeking their food on the heights where the stormy winds prevent the snow from lying deep. From all the attempts that have hitherto been made, to tame them is utterly impossible; on being confined, they either effect their escape, or starve themselves to death. The Tartars and Kozaks therefore consider them in no other light than as objects of chase, and kill them for the sake of their flesh, which is a choice dish with most of the nomadic tribes. The chase of them, however, is very difficult, as they are not only excessively fleet, but have withal so nice a scent, that under the wind they can smell the men at the distance of several versts, and then immediately take to flight*.

The Ass, that creature endowed with useful though not shining qualities, and decryed for defects of little consequence, is a domestic animal in very few parts of Russia, but one of those is Tau-

* Pallas, travels, tom. i. p. 211. tom. iii. p. 510.

rida. The great utility of the as, whom modern prejudice has undervalued in the estimation of mankind, would well repay any attempts that might be made to extend the breed of this contented animal, at least in those tracts where the want of pasture is in opposition to the multiplication of the horse. — The zoology of the russian empire has two remarkable animals to produce, both apparently belonging as well to the equine as to the asinine race, and yet essentially distinct from the mongrel breed of mules. The first, which by the Mongoles is called *DSHIGGETEI*, or long-ears, roams troopwise in the mongolian steppes, about the lake Ural and in Taurida; but within the russian borders, since the construction of the frontier-posts, is become much more rare. In beauty of form he far exceeds the as and even the mule; being of slight make, slender limbs, a beautiful colour, and a wild lively look. The ears too, which are in juster proportion than those of the mule, and which he bears briskly erect, become him much; and, with so many outward advantages we are almost inclined to overlook his rather clumsy head and his little asinine hoofs; only the straight angular back and the ugly cow-tail, which he has in common with the as, disfigure this elegant animal. The swiftness of the *dshiggetei*, which by undeniable accounts, transcends all description, is proverbial among the Mongoles. No horse, how fleet soever he may be, has ever yet been

been able to overtake the dshiggetei in the course, and there is no other way of taking him than by stratagem, or by lying in ambush for him. Were it possible to tame this animal, there could not be found in the world so excellent a nag; but they are said to be unconquerably wild. Indeed it would be surprising if the Mongoles and other asiatic nations in so many centuries should never have fallen on the thought of rearing young colts, which often enough come into their power, and getting out of them a better breed. In the mean time it would be worth the pains to make a useful and not entirely hopeless trial with very young foals, which should be caught within a few days after their birth. If the government gave orders to this effect, it would be an easy matter to have some caught in the steppes by the Tunguses on the frontiers; and should by this means a new and by their fleetness so useful a species of domestic animal be obtained, the trifling rewards that might be bestowed for the advancement of this project, would not certainly be thrown away. — One other animal which seems to form a middle species between the horse and the ass, is the KHULAN, which Pallas holds to be the onager of the ancients, and which is exceedingly fleet, and likewise of an untamable ferocity. The khulans go in monstrous droves, especially in spring, when they take their migration northwards from the Ural, resorting to open and cool mountains; or in autumn, when they

they return to the warm regions of Persia and India *.

In some provinces of the russian empire the CAMEL is likewise of the number of domestic animals: among the european governments this is particularly the case in Taurida. Here is found the two-humped camel, which the count de Buffon improperly terms the dromedary, and his breed might be cultivated to great advantage in the saline plains of this peninsula, especially if the white species were to be introduced, whose wool may be better and more easily coloured. Besides, this animal may be of use to the army, for transporting the artillery in the heaviest roads, and if it were thought expedient to employ them in battle, there would be no difficulty in putting cavalry of the enemy to flight, it being a well known fact that the horse, if not accustomed to the sight of the camel, immediately turns tail and gallops off at full speed †.

The nomadic tribes, by whom this serviceable animal is kept in herds, are the Kirghises, Baschkirs, Buræts, Kalmuks, and Mongoles. As this is the last time that we shall have occasion to speak of the Kirghises, we will here state the proportion in which the several kinds of animals are found among the nomades. A common herdsman keeps not often fewer than thirty to fifty horses, half as

* Pallas, travels, tom. iii. p. 217. 511.

† Pallas, tableau de la Tauride, p. 49.

many

many neat-cattle, about a hundred sheep, several camels, and from twenty to fifty goats. Yet there are men, particularly in the middle horde, who possess as far as ten thousand horses, three hundred camels, between three and four thousand head of horned cattle, twenty thousand sheep, and above a thousand goats*. The camels thrive in the warm and salt steppes of the Kirghises uncommonly well, and they are either of the singly gibbous or the doubly gibbous kind; the former can endure thirst longer, and are therefore fitter for distant journies, but the latter yield more and better wool. As these animals multiply but slowly†, and moreover are very weakly, the breeding of them requires a particular care and attention. In winter they are sewed up in felt-cover-

* Russia: or a complete description of all the nations that compose the russian empire, art. Kirghises. Pallas says that in general horses and sheep are the most numerous part of their stock; that they possess camels in a far less number, and are the worst provided with horned-cattle, as they cannot well support themselves on the steppes in winter without regular provender; tom. i. p. 396. This seems in some measure to contradict the above statement.

† It is usual to couple the camels in February, about which time they are most in heat. The female is habituated to fall on her fore-knees at the word, "Tshuck!" whereas the male seats himself on his hinder knees. When a female camel is pregnant, she no longer admits the male; and, as she goes with young twelve months, and suckles her foals two years, it is very natural that the multiplication of this animal should go on but slowly. Pallas, travels, tom. i. p. 397.

ings; or, if the cold be severe, rush mats are extended about them and between the tents for their protection. The foals are very early taught, at the speaking of a certain word, to fall down on the fore-knees, and at the same early age the partition of the nostrils is pierced, through which a cord is passed for the purpose of guiding them. The camels are exceedingly useful to the Kirghises in their housekeeping. On removing the camp they are the beasts of burden; on them the yourts and furniture are packed, the load whereof however must not exceed thirty, and when the journey is long, not sixteen pood. A two-bunched camel yields annually ten or twelve pounds of wool, which is partly wrought up by the Kirghises themselves into stuffs and ropes, and partly sold into Russia and Bukharia. From the milk of these animals, which is very pleasant to the taste, the Kirghises make their butter, cheese, and spirituous extract, which they call kumiss. The flesh is eaten, and the skins serve for leather vessels to keep their milk in *.

Among the Kalmuks and Mongoles likewise are both one and two-humped camels; and, as the steppes in which these people at present nomadize, on account of the variety of saline herbs, are very favourable to the breeding of cattle, in so great a number, that they not only have enough for their

* Russia: or a complete description, &c. art. Kirghises.

own consumption, but they frequently bring them to Orenburg, and barter them to the Bukharians. Among the Baschkirs and Buræts these animals, in consequence of frequent diseases, are greatly diminished, and likewise the severe winter in the regions inhabited by these tribes is prejudicial to them *.

The REIN-DEER, which we have already spoken of as an object of chase, is as a domestic animal a very useful creature among the Laplanders, the Samoyedes, the Ostiaks, the Koriaks, the Tschuktches, the Tunguses, the Yakutes, and with several tartar stems in Siberia, and in this twofold character perhaps the most useful of all that we have hitherto mentioned. The breeding of these animals constitutes not only the main employment but even the whole wealth of the above-named tribes, and the uses to which they are put are so extensive and various that no other tamed animal can be brought into comparison with them. Besides that they are the only cattle for draught and burden made use of by the northern nomades for riding, carrying, and drawing, their flesh is also the ordinary food, their milk the most nutritious beverage, and the cheese prepared from it the best relish to the taste of these people. The hides furnish the chief material of clothes and of covers to the yourts, the fur is made into warm clothes and mattraffes, the horns and bones into household

* Pallas, travels, tom. i. p. 326. tom ii. p. 76.

utensils,

utenfils, and the sinews into twine. But what infinitely enhances the utility and the local value of these animals, is their contentedness, and the little attendance necessary to their preservation. Without being housed they thrive in climates where no other domestic animal can subsist; without being foddered they maintain themselves on a soil, which for ten months in the year is covered with snow and ice; a little moss, which they scratch up from below this frosty mantle of the earth, is their ordinary food, and the snow that they lick up allays their thirst. Endowed with such properties as qualify the rein-deer to be the sole nurse and companion of man in those rude regions where the whole creation seems to refuse him succour, they all would have been of no avail but for the benign instinct to the greater multiplication of his species, without which this useful animal would perhaps long ago have been extinct. Accordingly, from the indispensable succours he affords, he is held in such high esteem with the nomades, that they borrow their noblest families from him; nothing, for example, can more honour a Samoyede than to call him a rein-deer gelding. The herds that are kept by these several tribes are considerably various according to the proportion of their industry and their wealth. Among the Laplanders six hundred to a thousand rein-deer compose the ordinary fortune of a single herdsman: with the Samoyedes that man is already rich who possesses

from a hundred to a hundred and fifty of them. A farming Tunguse keeps a thousand perhaps; a Koriak several thousands; but among the Tschuktsches there are herdsmen who have herds of ten to fifty thousand rein-deer*.

In concluding this section let us not omit a race of animals, which, though forming in all countries a part of the domestic animals, yet in Russia alone is applied in an extremely curious manner to the service and accommodation of mankind. It is the dog, of whom numerous packs are found with almost all the nomadic nations, and are used for draught particularly by the Kamtschadales and the Ostiaks, by the eastern Samoyedes, the Tunguses, and by some stems of the Mandshures: an employment to which they are destined even among the Russians in the government of Irkutsk, where in some districts they supply the place of post-horses. But no-where is the breed of this animal of such importance and necessity as in Kamtschatka†, where they constitute the only species of tame domestic animals, and where it is as impossible to dispense with them, as in other countries with horned cattle or the horse. The kamtschadale dogs are in size and shape little different from the large russian boor-dog; but their man-

* Russia: or a description, &c. under the several heads.

† Steller's *beschreibung von Kamtschatka*, p. 132—140. p. 370—374.

ners are almost totally changed by their course of training, diet, and treatment. They are held to be the best and most long-winded runners of all the Siberian dogs, and their spirit is so great that they frequently dislocate their joints in drawing, and their hair is often tinged with red from the extravasation of blood occasioned by violent exertions. They possess so much strength that four of them, which are commonly harnessed to a sledge, draw with ease three full-grown persons with a pood and a half of baggage. The ordinary loading of four dogs amounts to five or six poods, and a single man can in this manner, in bad roads, go thirty or forty, but in good roads eighty to a hundred and forty versts a day. The deep snow which the dogs run over without breaking in; the steep mountains and narrow passes in the vallies; the thick impassable forests; the numerous streams and brooks that are either not at all or but slightly frozen over; the storms which drift the snow and efface every vestige of a track: — all these circumstances together would prevent the travelling with horses, had they ever so many of them, in winter at least; and it is therefore very probable that the dog, even under the highest pitch of civilization to which Kamtschatka can ever attain, would be always the principal and most serviceable animal for draught. Accordingly the taste for dogs is here as great as elsewhere it is
for

for horses, and considerable sums are not unfrequently expended in the purchase of them and on the elegance of their trappings.

The manner in which these animals are trained to their singular employment has so powerful an influence on the individual properties of the whole species, that the description of it will not be uninteresting even to the philosophic reader. For proper draught-dogs the choice is principally made of such as have high legs, long ears, a sharp muzzle, a broad crupper, and thick heads, and discover great vivacity. As soon as the puppies are able to see, they are thrown into a dark pit, where they remain shut up till they are thought sufficiently strong to undergo a trial. They are then harnessed with other trained dogs to a sledge, with which they scamper away with all their might, being frightened by the light and by so many strange objects. After this short trial they are again confined to their gloomy dungeon, and this practice is repeated till they are inured to the business of drawing, and are obedient to their driver. From this moment begins their hard and miserable course, only alleviated by the short recreation the summer affords them. As in this season they are of no service, nobody cares about them, but they enjoy a perfect liberty, which they principally employ in assuaging their hunger. Their sole nourishment consists of fish, which they watch for all this time by the brinks of

-3

of

of rivers, and which they catch with great dexterity and cunning. When they have plenty of this food, like the bears, they devour only the heads, and leave the rest behind.

This respite, however, lasts only till October, when every proprietor assembles his dogs, and ties them up in a place adjoining to his dwelling, where they must be kept on spare regimen to bring down their superfluous fat, that they may be rendered more fit for running. With the first fall of snow commences their time of torment; and then day and night is heard their dreadful howling, in which they seem to bewail their miserable fate. With the hard lot these animals have to bear the winter through, their food consists only of soured or dried fish in a state of corruption, and even this they are only allowed as the better diet, to refresh and invigorate them, as it is observed that they become nice and more easily tired on receiving this delicacy shortly before they set out on a journey. Their ordinary sustenance is mouldy dried fish, a treat at which they can seldom satisfy their appetite without bleeding jaws, as the greater part of it consists of bones and teeth. This hard usage, however, they generally revenge by their amazing voracity, which spares no object on which they can lay hold. With thievish artifice they mount the ladder to the aerial cupboard of their tyrannical master; with unnatural greediness they prey upon his
thongs,

thongs, straps, and leathers, wherever they find them; and the depravity of their taste is such, that rarely can a Kamtshadale incline in obedience to the ignobler calls of nature, without first arming himself with a whip; as at all times a ravenous pack is ready to contend even to blood for his loathsome leavings.¹

Not only in their voracity, however, but in the whole individuality of their brutal behaviour this depravity is ever conspicuous. Instead of the vigilance, fidelity, and attachment which the dog everywhere shews for his feeder, and therefore has in all nations been made the symbol of these virtues, the kamtshadale dog has assumed the character of a crafty slave. Sly and unfriendly he shuns the look of his master; unconcerned about the safety of his property, he will not stir to defend it against a stranger. Timid and sullen, he sneaks prowling alone, still leering on every side from suspicion. It is only by artifice and deceit that they can be harnessed to the sledge; while this is doing, they all stretch their heads upwards, and set up a melancholy yell, but as soon as the sledge is in motion, they are suddenly mute, and then by a hundred artful tricks seem to vie with each other to weary the patience of the driver, or resolved to bring his life into jeopardy. On coming to a dangerous place they redouble their speed; where, to avoid being precipitated down a steep mountain, or plunged into a deep river,
he

he is commonly forced to abandon the sledge, which seldom fails of being broken to pieces, and he only finds it again at the next village, if the dogs have not been so lucky as to set themselves free outright.

Yet the dog of Kamtschatka, though so degenerate from the rest of his kind, is not deficient in qualities by which he may be serviceable to man when he pleases. Besides the advantage of being able with these light creatures to traverse the trackless mountains, and proceed along the surface of deep ridges of snow, they are also excellent guides on the dreary way; as in the most pitchy darkness, and in the most tremendous storms of snow they find out the place for which their master is bound. If the storm be so violent that, unable to proceed, they must remain on the spot, as not unfrequently happens, the dogs lie by the side of their master, and preserve his life by their natural warmth. They likewise give infallible notice of approaching storms, by scratching holes in the snow and endeavouring to shelter themselves in them. By these, and many other good qualities, the kamtschadale dogs by far overbalance the mischiefs they do by their perversity; and to what other cause than the tyrannical treatment they receive from hard-hearted man is the blame of this perversity to be ascribed? Great as their rogueries may be, they scorn comparison with the cold and selfish ingratitude which these degraded animals,

animals, chained to perpetual bondage and stripes, endure from mankind. Scarcely has the kamtshadate dog, worn out by the weight of his bodily sufferings, arrived at a premature old age, in which he is unfit any longer to draw, than his inexorable master exacts of him the last surrender he is able to make—his skin; and the same cruelly treated slave, who, during his short and painful life, has so often imparted his animal warmth to his merciless tyrant; affords him the same service and in the same manner even after his death.

SECTION IV.

Agriculture.

HAVING in the former sections delineated the mode of life and branches of business which are common to ALL the tribes of the russian empire; and in which chiefly the rude and half-savage of them participate; we now proceed to those employments which belong exclusively to more polished nations. — No period in the civilization of a people is more important and decisive than that of their transition from the pastoral life to AGRICULTURE, or from the wandering nomadic to the sedate civil constitution, which determines the boundary between civilized and barbarous nations. Nay, it is agriculture that fixes man to the

the portion of earth which he has moistened with the sweat of his brow, and has been rendered serviceable by the labour of his hands ; by it mankind are brought together, and held in a numerous and lasting connection ; it is the fruitful bud whence are unfolded the praised and disputed advantages of the social state and superior cultivation. Property now, by the increased difficulty of acquisition, obtains a higher value ; and the securing of it against the attacks of artifice or violence gave birth to laws. Instead of the insulated and independent existence of the herdsman, who receives from his flocks all the necessaries of life, the husbandman enters into the state of mutual dependence with others, whose superfluity must supply his deficiency. Hence arises barter, the consequences whereof have incalculable influence on the civilization of mankind ; and thus agriculture is the source of the civil constitution, without which the nations would be called savage, —and commerce, without which they might be deemed barbarous.

Of the multitude of nations which the russian empire numbers as its inhabitants, are several still far distant from this degree of civilization, and some whose inhospitable soil and brazen sky reject the hopes of their attaining it for ever. In this latter case are particularly the Laplanders, the Samoyedes, the Ostiaks, the Tunguses, the Kamtschadales, the Koriaks, the Tschuktsches, and the eastern

eastern islanders. Not much better provided for by nature are a great part of the Siberian Tartars; and even the warm, but arid and saline steppes of southern Russia oppose insurmountable obstacles to the introduction of agriculture among the nomadizing nations there. This alteration of manners has been more successfully brought on among the European and southern Siberian Tartars, the Tschermishes, Tschuvasches, the Votiaks, the Mordvines, the Baschkirs, the Meschtscheriæks, and other nations of the middle regions, who for the most part only forsook the nomadic way of life on their submission to the sovereignty of the Russian empire. This has been the case from time to time with several detached stems, especially since the government endeavoured by suitable measures to encourage the dissemination of the practice of agriculture, and since the partitioning of the former large governments has limited the governors to a sphere of operation more contracted, and of course more easily to be inspected. Accordingly sometimes we shall see tribes, of which several stems are entirely devoted to agriculture, while others are still attached to the chase, or to the nomadic mode of breeding cattle: others again halt in a middle state bordering on both these ways of living; in winter, for instance, inhabiting permanent villages, but dwelling in summer in moveable yourts, with which they roam about the most excellent pasturages. Where the

soil and the climate are favourable to agriculture, even nomadic people accustom themselves sometimes, as excited by example and encouragement, to this laborious but secure branch of sustenance, and several of them, who less than a century ago were indolent herdsmen, have formed themselves now into industrious and diligent farmers. There are few districts in Russia where agriculture is more sedulously prosecuted than in the tracts about the Kama and the Volga, inhabited by Tartars, Votiaks, and Tscheremisses, who seem to contend in a laudable emulation to outvie one another in the culture of their grounds, and deem it an honour to possess a store of corn untouched*.

Of the nations who have followed agriculture from time immemorial, though in various ways and with different success, the principal are the Russians, the Poles, the Lithuanians, the Lettes, the Finns, and Esthonians. As the first of these compose the chief and the most numerous part of the inhabitants, we shall in the present section make russian agriculture the basis of our description, and only notice by the way the most striking differences that appear in the other tribes: and, as so considerable and comprehensive a subject cannot be treated without a certain attention to method, our inquiry shall first be directed to the adaptation of the soil to the purposes of agriculture;

* Pallas, travels, tom. iii. p. 491.

then

then to the manner in which it is generally carried on; and, lastly to the principal products accruing from it either for home consumption or for the uses of commerce. The result of these several facts will supply us with matter for general reflections on political œconomy, the combination whereof will form the conclusion of the present narrative.

The state of agriculture in all countries, alike depending on the nature of the soil and climate as on the diligence and industry of the inhabitants, the NATURAL DISPOSITION of the country for this species of culture is properly the first object of our investigation. The great expanse of the russian empire, and the diversity of climate and territory thence arising, cause such a variety in the employments of rural œconomy, that in this respect we can only adopt a very general distribution for our rule, if we would not lose ourselves in boundless details, since almost every government in its natural quality is subject to very great, and sometimes extremely striking, variations.

TOTALLY UNFIT for every kind of œconomical culture are the most northern and eastern districts of the empire, of the former particularly in Siberia. Here we may regard the sixtieth degree of latitude as the boundary beyond which no agriculture is practicable. According to Pallas's account, to the north of Demiansk, (a borough in the government of Tobolsk, lying in about $59\frac{1}{4}$ deg.

deg. north lat.), hardly anything is raised but barley and oats; at most a little summer grain. Hemp or flax are seldom sown, and in three years they scarcely have once a tolerable crop: the cabbage here produces no head, but spends itself in loose green leaves*. Farther to the east the parts lying under the same latitude are still more unfit for agriculture. The repeated attempts that have been made about Okhotsk (between 59 and 60 deg. north lat. and 160 deg. east long.) and Uds-koy-ostrog 55° 20' lat. 150° 40' longit.) in the government of Irkutsk, shew, that the summer is here too short, that the earth remains too long frozen in spring, and that the night-frosts in autumn come on too early for allowing us to hope that the culture of corn will ever be introduced to effect: even in Kamtschatka, where the southernmost cape, however, runs out to 51° north lat. similar trials have been made, but with very poor and precarious effects†. In the european or western parts of the empire, indeed, the fruits of the field and the orchard have been produced in the sixtieth degree of latitude by a laborious and difficult process; but the circles in the governments of Olonetz and Archangel, which lie from two to three and a half degrees higher to the north, have likewise no agriculture; and, even in some dis-

* Pallas, travels, tom. iii. p. 15.

† Aufwahl. œkonom. abhandl. tom. iii. p. 15.

tracts of Vyborg, St. Petersburg, Novgorod, Vologda, Perme, and Viatka, it is attended with great and deterring difficulties. Now, by setting off these differences of the western and eastern parts of Russia against one another, and consequently admitting the sixtieth degree of latitude as the general boundary of the soil susceptible of culture to the north, it follows, that the russian empire contains about 162,000 square geographical miles of land totally unserviceable to the purposes of agriculture.

Besides the foregoing northern governments, some of the southern districts of Caucasus, Saratof, Ufa, Kolhyvan, Ekatarinoslaf, and Taurida, are of a SERVICEABLE BUT POOR soil, where the natural impediments are very difficult to be conquered, and perhaps never can be entirely surmounted. The former, beside great bogs, morasses, and forests, have generally a moist and sandy soil, the slender fertility whereof is still more impeded by the long hard winter, and by the frequent and sudden changes of weather. In the latter are generally seen large plains or steppes, which being also of a sandy or saline soil, are not seldom entirely destitute of water and wood, and therefore just as little suited to the culture of corn. — To the FERTILE regions belong most of the governments of the middle, and several of the northern tracts; but the BEST AND MOST PRODUCTIVE soils are chiefly found in Little-Rus-

sia, Kazan, Simbirsk, Kharkof, Kursk, Orel, Nishney-Novgorod, in the southern part of Taurida and Caucasus, in the newly-acquired portion of the polish Ukraine, and particularly also in some of the siberian provinces. That even here the fertility is not everywhere alike, is as little in need of a remark as the circumstance, that there are particular districts, besides the said governments, which for quality of soil by no means fall short of them; but the circumstantial description of which would lead us far beyond the prescribed limits of our plan.

The natural riches and great fertility of the districts bordering on the Volga, the Kama, the Dniepr, the Terek, and the parts about the Euxine, &c. have long been experienced over all Europe; yet the prejudice entertained in other countries against the natural quality of Siberia is so general, that it will excite no small surprise in many of our readers at seeing the following description of the shores of the Yenissey, supported upon very substantial authority.

In the territory of Krasnoyarsk, a circle-town of the government of Kolhyvan, between the 55th and 56th degrees of north latitude, the fertility of the soil, notwithstanding the rather severe and continued winter, is so great that no instance has ever been known of a general failure, and that it is a very ordinary harvest when the summer-rye yields tenfold, the winter-corn eightfold, and the
barley

barley twelvefold. It is usual for the wheat only in bad years to yield the sixth grain, and the oats give an increase rarely short of twentyfold. The buck-wheat must only, on account of the richness of the soil, be committed to hungry lands, as otherwise it runs into stalk, and yet yields a reaping of twelve to fifteen fold. This quality of the ground, which is generally a black and light mould, both on the elevations and in the flat vallies, absolutely rejects the use of manure, which would only corrupt the seed, as has been found by experience. And yet the generality of the fields, if they are only left fallow about the third year, continue fit to bear ten or fifteen years and more; if then the fertility declines, the boor in that case finds excellent mountain-flats and steppes enough, where he can lay out new fields. — In consequence of this exuberance provisions are here in great plenty, and probably in no province of the empire are they at so low a price. When Pallas was at Krasnoyarsk, a pood of rye-meal sold for two or three, and a pood of wheaten flour for four and a half or five kopeeks; a whole ox was bought for a ruble and a half, a cow for a ruble, and a good serviceable horse for two or three rubles at most; sheep and hogs fetched from thirty to fifty kopeeks a-piece*. In the space of five-and-twenty years that have elapsed

* Pallas, travels, tom. iii. p. 5—7.

since

since that period, the prices have indeed considerably altered, yet this country is still one of the cheapest as well as one of the most rich and plentiful of all. — Though these instances of fruitfulness are among the most striking, yet proofs are not wanting in other tracts of Siberia, that this country, so amply and so variously endowed by nature, only requires a larger population for enabling it to produce from itself most of the necessaries of life in the greatest abundance.

As Nature, with such maternal care, comes in aid of the russian countryman, in by far the generality of the tracts of country that are susceptible of culture, it is no wonder that here as much is done with little pains and imperfect implements, as in other countries can be obtained by a laborious tillage and with artificial means. In fact, the MANNER IN WHICH AGRICULTURE IS CARRIED ON IN RUSSIA, taken in the whole, is so artless and simple as to need no prolix description for communicating to foreigners a competent idea of it. But, ere we can explain the process of the countryman himself, we must briefly take notice of the IMPLEMENTS OF HUSBANDRY of which he principally makes use*.

* Hupel's staatsverf. tom. ii. p. 560. Lepekhin's travels, tom. i. p. 40. Georgi, beschreib. des St. Petersb. gouvern., p. 576. Guldenstädt's travels, tom. ii. p. 480—493.

The commonest kind of PLOUGH is the light fork-plough or hook-plough, called in rufs socha, which is employed not only in most of the great-russian and fiberian provinces, but also in the governments skirting the Baltic*. It is without wheels, has two short plough-shares, which are fastened to a forked board, and is usually drawn by one horse or by two oxen; it is so light that it can be conveniently held by a lad of fifteen; and the horse, whose exertion in general is but small, goes commonly without reins, and thus leaves the lad with both hands free. This plough bites not deeper than somewhat about a verfhok, or $1\frac{1}{4}$ english inches, in the ground, and is therefore only employed in ploughing the old arable lands; turf and new grounds are turned up by what is called the knife-plough, koffulia, chiefly differing from the hook-plough by bearing half a verfhok deeper into the earth, and is fitter for cutting the little roots. In some parts for the same purpose they fix, instead of the two irons, a knife-blade in the plough-frame, cutting with it first the turf through, and then, by means of the proper forked-plough, turning it up, at which time the plough-

* A description and drawing of this fork-plough, which Pallas calls the hook-plough, may be seen in Guldenstædt's travels, tom. ii. p. 490; and, as it is used in Livonia, in Hupel's topogr. nachrichten, tom. ii. p. 275. In some of the russian provinces, though it is somewhat differently constructed, yet the differences are not material.

man must turn it over with his foot, as the plough does no more than raise it. For all other kinds of ground, even stony or full of tree-roots, the fork-plough is very useful. — This implement of husbandry has found as many advocates as disapprovers, since farming has been treated theoretically in Russia, and the suffrages on its utility seem still to be divided. On one hand it is certainly clear that the hook-plough, by not going deep enough, does not sufficiently turn over the large clods, nor thoroughly destroy the roots of the weeds; but this advantage is only in clayey and loamy soils, whereas in sandy ground the hook-plough is for that very reason particularly useful. As no mechanical ingenuity is necessary for the making of it, and in using it only one, and that not a very strong horse, is wanted, it is besides a great relief to the poor peasants, and it is hardly possible for another plough to have been invented so adapted to the several kinds of soil, and at the same time so light, commodious, and cheap, as the fork-plough.

A second sort, the heavy plough, is commonly used not only in all Little-Russia, and the governments adjoining to it, but also among the Tartars, Moldavians, Tcherkassians, Georgians, and Persians, in rufs called saban, resembling in some measure the ordinary german plough, and in the use whereof from two to four horses, or four to six oxen and sometimes eight are required.

In the number of variations which appear in the composition of this plough*, one deserves particularly to be remarked, where, before the transverse plough-iron, the knife-blade is fixed, for cutting the turf, which afterwards is raised and turned over by the plough-share. — Likewise the german, particularly the mecklenburg plough is used in several districts, especially among the foreign colonists; it is not however frequently seen, as the foreign rustics easily quit their country customs, and adopt the russian hook-plough, which they find more convenient.

The **MARROW** consists almost always of nothing more than short wooden pegs driven into thin laths woven together with willow-twigs. In Livonia they at least give themselves the trouble to fasten these pegs in narrow logs furnished with holes and connected by joints, so that such a harrow can be drawn over field-stones without detriment. Still more simple is the branch-harrow in use among the Lettes, Esthonians, and Firms, and is made of branches of brushwood twisted together, of which some strong ends are left prominent. This kind has the advantage of being extremely light; it is employed not only in clean grounds, but particularly for bush-lands, on

* Most of the ploughs used in Little-Russia are circumstantially described and delineated in Guldenstadt's travels, tom. ii. p. 480—493; where there is also a figure of the georgian plough.

account of its elastic teeth, as on such fields the harrow with pegs would soon become unserviceable. The german harrow with iron teeth is only seen in particular places with the colonists, or on estates where the proprietors pay extraordinary attention to tillage. — The use of the ROLLER is known in very few parts; nor is it perceived even that a field yields a less crop for neglecting the roller; however. here and there the boors employ this instrument, and there are even several kinds of it.

The utensils for REAPING the corn are different in different parts. In the great-russian provinces the sickle is in use, which is also introduced into Livonia, and instead of which the esthonian boor employs the ordinary scythe. In the Ukraine the large german scythe is generally employed. The Lette cuts all kinds of corn with a little scythe fastened to a short handle, which he works in his right-hand; holding in the left a small hook, with which he gathers as many straws as he intends to cut at once. The Tartars use short but very arched scythes to a short handle, with which, without stooping, they cut to the right and left. — Among all these the lettish scythe seems to deserve the preference. It is proved by experiments, that one man with this instrument can reap as much as three people with esthonian sickles; besides, this scythe has the advantage that in the use of it the labourer needs not stoop, that no long stubble is left standing, and consequently not so much straw is lost,

lost, and that the ripe ears are not so much shaken as to shed their grains, all which is frequently the case in cutting with the scythe. Instead therefore of introducing the complete german reaping-scythe with its wooden guard, as some livonian landlords have attempted to do, it would be more beneficial to bring the lettish into more general use throughout Russia. — For **THRESHING** the ordinary flail, made very light, is employed, or even only long crooked sticks.

More simple and artless implements of husbandry cannot well be conceived. When the german peasant first sees the one horse plough, the little scythe, the light threshing-flail, he must think them to be mere play-things; and yet the colonists from that country very soon accustom themselves to the use of them, as not only favourable to laziness, but also in some degree adequate to the exigencies of the country.

The **FIELDS***, from their essential quality may be reduced to the three following heads; as either tith, or steppe, or wood-land, in some districts called bush-lands. By **TILTH** is meant such fields as are in continued cultivation, or are tilled every year. In Russia it is the general practice to divide the land into summer, winter, and fallow fields, in rufs yarovaia, osimovaia, and yar, to which

* Lepekhin's travels, tom. i. p. 42. Hupel's staatsverf. tom. ii. p. 526. Georgi, beschreibung des St. Petersburg. gouv. p. 568.

some add the new-broken, novina, to which we have assigned a particular article. As probably very few readers need an explanation of these distinctions, we will only just observe, that the summer-field is sown and reaped in one year; whereas the winter-field receives the seed in autumn, and keeps it till the following summer. The former in most districts of Russia is sown with summer-wheat, summer-rye, barley, millet, buck-wheat, flax, hemp, pease, poppy, heathcorn, and oats: but the latter only with rye and wheat. When the land has been winter-field, it is left fallow, and lies the rest of the summer, as well as the autumn and the whole winter, unoccupied; at times, notwithstanding, the russian boors sow even what has been winter-field in the following year with seeds that do not draw the soil so much, and leave the ground some repose under this change. Entirely to omit the practice of letting the ground lie fallow, as proposed by agriculturists of late, is thought even by judicious landlords to be very difficult or utterly impossible on account of the shortness of the summer in most of the provinces of the russian empire. As the summer corn is not reaped in many parts till August or even September, neither the time nor weather will allow of the ground being properly tilled for the winter sowing, and the late-sown rye, by reason of the night-frosts, will not acquire the force necessary for

for being able to resist the rude blasts of the autumn and spring.

The **STEPPE-GROUNDS** may properly be put in the same class with the grass-lands every where known; for though there be some difference between them, yet in this they are alike, that they are employed without any sort of manure for a short time and then left again to nature. In the large steppes that are found within the compass of the russian empire, and where every one that is desirous of pursuing agriculture may appropriate to himself any portion of ground at pleasure, no other culture is known than to plough the ground once, to harrow, and then to sow it. Even in districts where the soil is meagre, this easy tillage is in use, particularly in sowing linseed; but if the husbandman wishes to throw grain into his grass-grounds, it is usual to plough them several times the whole year through, and to harrow before the sowing, that it may be more mellow and better able to imbibe the fructifying particles of the atmosphere; and this is called, by a technical term: to leaven the land. This careful manner of proceeding is by no means general on the steppes.

FOREST GROUNDS, or bush lands, lastly, is the name given to fields that require to be fertilized by fire, which is generally practised in two ways. They either cut round a forest or bring brushwood to the place, and after being prepared and dried burn it upon the ground; or they clear away the wood from the spot, plough up the ground,

ground, and cover the faggots or split logs with it before they set fire to them. The former process is called *rhœdung*, and the latter *kuttis*, but both in the one and the other there are several variations according to the different districts. In the inner provinces of Russia the boors, about Peter and Paul day, or the 29th of June, content themselves with cutting down a tract of forest, leaving the wood to lie upon the spot, not burning it till the spring of the following year. The first sowing on such a burnt-*rhœdung* is commonly flax, then in the next year barley or oats, and lastly winter corn. If the soil be good in itself, it is employed for constant tillage; in the contrary case the cultivated *rhœdungs*-ground is left for some years for its gradually growing into forest again, and after fifteen or twenty years it is once more fit for *kuttis* or *rhœdung*.

Laborious and difficult as these works are, yet they yield a very large and certain profit, and may therefore be recommended under particular limitations in districts where there is an actual superfluity of wood. In the government of St. Petersburg is obtained, even on a tolerable soil, from a *rhœdung* in the first four years a harvest from ten to fifteen fold, and from a *kuttis*-land ten to five-and-twenty fold. Indeed it has of late been affirmed by some gentlemens' stewards, that the *kuttis* renders the ground perfectly unfruitful for a long series of years: but this assertion in many provinces of Russia is refuted by upwards of a hundred

hundred year's experience. — Of greater importance than this objection is the damage, which particularly the rhœdungs or novines do to the forests. Besides the space which the boor has selected for arable land, large tracts of timber of the best growth are thus burnt down; and besides this, the boor fells all the trees without distinction, and among them even such as in time would be useful for ship-building*. It would be infinitely

* Against this devastation of the forests several enlightened landlords have already expressed themselves very feelingly; and it certainly were much to be wished, that their remonstrances might meet with general attention. Not only in Russia but in Sweden too forests are laid waste, for the sake of a few good harvests, which cost ages to produce. — With all the advantages that can accrue from the rhœdungs, reckoned at the utmost, it is yet somewhat surprising, that, for example, several versts round St. Petersburg, where a fathom of birch-wood for fuel in 1795 cost two and a half to three rubles, and in 1798 even six rubles, a square geographical mile of forest was—not felled; that might have been for the benefit of the estates, but—burnt. *Aufwahl-œkon. abhandl. tom. i. p. 115.* — What have the country people commit in this respect, the following instance from the government of Olonetz may serve to evince. Here the culture of the winter-rye in rhœdungs-fields is accounted the most profitable; if it be proper to apply the word profit to a species of culture that is attended with the greatest detriment to futurity. However, this procedure might be suffered to pass if the boors confined themselves to those tracts devoted to this use, and would only consign to the flames the young wood and the bushes; but they hew down and burn not only the middling sized trees of about fifty years growth,

more beneficial, therefore, to the culture of the country, if instead of these rhoedungings, which help to increase the ruinous scarcity of fuel, the morasses were to be drained, the noxious influence of which on the population and the breeding of cattle, and indeed on the culture of grain itself, is already but too perceptible, and the extermination whereof would, by the acquisition of fat lands, repay with usury the labour bestowed upon it*.

In

growth, but even they spoil the finest carpentry-timber and excellent masts which have required two hundred years to have attained to their dimensions. The boor not being able to fell so many thick trees, he strips them only of their bark, leaves them to wither, and then kindles the small brushwood which he had cut down before. This old ground in good years usually yields an increase of forty to fifty fold and upwards, bears two crops of rye, and afterwards two crops of oats. Id. *ibid.* tom. i. p. 184.

* In an extremely remarkable paper, communicated by a very sensible person to the free æconomical society, it is shewn that in the government of St. Petersburg alone, by the draining of morasses, about 500,000 desattines of excellent arable and meadow land might be obtained. The proposals made by the author to this end are not capable of an abstract; but probably it will not be uninteresting to the reader to see here the collected advantages which must be the natural consequence of that beneficial operation of political æconomy. 1. The residence, by having a number of rich lands in its vicinity would ensure to itself a plentiful supply of bread-corn, and the price of provisions would of course be

In the government of St. Petersburg, where for some time past endeavours have been made to gain

be lower. 2. The great multitude of people at present occupied in the transport of corn to Petersburg, might be employed in labouring the newly-acquired acres, which would be just the same thing as if an equal number of husbandmen came and settled in Russia from a foreign country, and that without any expence to the government. 3. In good years a quantity of corn, more or less, would be exported. 4. The better practice of agriculture, in the vicinity of the residence, where knowledge and improvement are eminently found, would form these districts into a school of farming for the rest of the empire. 5. By clearing the country that lies on the south side, where, from some thousands of square versts, foul exhalations are constantly rising, the quality of air would be ameliorated, whereby the health of the people might be improved, the diseases of the cattle diminished, and the noxious insects destroyed. 6. The carriage of the corn to be expected from the drained flats, as well as the mills for grinding it, &c. would furnish employment to the other country-towns of the government; and even the art of constructing mills, so much neglected in Russia, would thus become more general, &c. *Aufwahl oekonom, abhandl. tom. i. p. 139.* — Great and generally useful as such an undertaking would be, the execution of it is only to be expected either from the authority of a wise administration or from the united energies of all the land-owners of the government. In the mean time the attempt is laudable which some individuals have set on foot to this end, and it is no small satisfaction to us to be able to adduce one example of this nature which has already found imitators, and in time will probably find still more. The deserving person who set this example

gain arable land in this laudable manner, these fields of drained morasses repay in the first crops twenty, thirty, and even five-and-thirty fold; and therefore the produce is not only greater than it

was the late court-banker baron Fredericks, who, at his estate of Ræbova, fifteen *versts* from the residence, converted a large useless and in many respects noxious morass into good corn-land, fine meadows, and excellent pastures, and occasionally made good roads through inaccessible bogs. In this view he cut a large canal, in length eight *versts* and 300 fathoms, into which several little collateral channels were conducted; altogether forming, according to an actual ad-measurement, an extent of 120 *versts*, or about 100 english miles. This great work was begun in 1775, and was completed in three summers; the expence amounted only to six thousand rubles; for which, in regard to utility, inconsiderable sum a spacious swampy forest, into which the sun-beams could scarcely penetrate, covered with perpetual clouds, oppressed by intense frosts, and inhabited by beasts of prey and noxious insects, was converted into airy healthy fields and delightful prospects. Besides the canals, fourteen *vistas*, each 15 fathom wide, and from four to eight *versts* long, were cut through the forest and cleared away: whereby, without reckoning the beautiful views, the forest was rendered airy and dry and accessible to the very heart of it, and so much good building-timber was got out of it, that from the *vistas* alone 3000 balks were obtained. *Aufwahl. œkon. abhandl. tom. ii. p. 107.* — How many healthy, fertile, and useful provinces might the russian empire conquer from Nature, in a similar way, by diligence and industry, by which means the population and the national revenue, instead of losing, must be infinitely the gainers!

commonly

commonly is on an average from the kuttis-fields, but good arable land is obtained in perpetuity, especially in the higher districts which are of a firm soil.

After what has been hitherto said concerning the quality of the implements of agriculture and of the ground, it will be easy to form an idea of the COUNTRYMAN'S MANNER OF CONDUCTING HIS BUSINESS. There is certainly no country in Europe where agriculture on the whole is conducted with so much negligence, and yet at the same time yields so great and important a produce; but with few countries has Nature dealt so liberally as this in most of the provinces of middle and southern Russia*. — The seed-time and

* How little culture the soil requires in such districts may be learnt from a few instances. Pallas observed on his travels, that in several places the corn shed from the ears which had sown itself, stood finer than that on the laboured fields; and he assures us that he did not perceive this merely in particular places, but in entire provinces. Travels, tom. ii. p. 100—280. — If the plough be unnecessary in some parts, manuring is even prejudicial in others, for example, about the Don, on the Samara, in several circles of Ufa, in the barabintzian steppe, on the Samara, here and there on the Yenissey, on the Selenga, on the Volga and Kama, &c. where the corn, by manuring, either shoots out too rank or is burnt up. Pallas, travels, tom. ii. p. 641—650. tom. iii. p. 6—168. Here then that refined mode of culture would be superfluous, and the boor is therefore in fact pardonable in sowing his corn, “as if he were feeding the birds of the air,” as Pallas says.

harvest in so large an empire cannot be universally ascertained. The provinces of the middle territory are accustomed to sow the winter corn from the beginning of August till towards the middle of September, and in July or August of the following years to reap; consequently these kinds of grain are standing, upon an average, above eleven months on the field. The summer produce is usually sown in May and cut in August; they are of course only three or three and a half months on the field. In the southern districts, when the boors rest after having finished their summer-sowing, those in the northern dung their future winter-field, and then follow the hay-making and the harvest. In autumn they are both busied with the winter sowing; but the upper husbandman is entirely free the whole winter till the summer tillage, and has nothing to mind but his household concerns; whereas the lower is dunging his fields in the great fast before easter. The former is satisfied with only ploughing and harrowing it once; the latter must perform the same labours twice. — In most parts the boor sows, chiefly in spring, his corn on the waste that was fallow the last year or several years before, without dunging it exactly every time; then he takes his light plough in hand, breaks up the ground with it, and a second horse, following him with the harrow without a driver, concludes the whole business. Only for the new-breakings up he employs the

the before-mentioned knife-plough which has a deeper hold on the ground. The fields are only dunged in places where the stock of cattle allow of it; the boor has nowhere any conception of an artificial manure with marl, chalk, pond-mud, or even merely with the sweepings of the forests. Only on the farms of particular noblemen are any endeavours used to improve the ground by such means; the boor neither employs nor knows no other compost than the rhœdungs and muck, and even these the russian, particularly the Siberian boor, does not always use. The harrows also being so light, there is seldom any clean harrowed land, especially where the soil is loamy and heavy. The corn is partly cut with a sickle and partly mown with the scythe. In some provinces it is threshed out with flails or sticks, on others trodden out by horses or people; sometimes it is threshed wind-dried, but has been on the kiln before*.

This general description however is only applicable to the manner in which the boor of Great-Russia performs the labours of the field: in the provinces lying on the Baltic, in the white-russian governments, in the polish Ukraine, and even in proper Russia on the estates of noblemen who carry on the farming business with some degree of care, incomparably more pains are bestowed, and

* Hüpel's staatsverf. tom. ii. p. 528. Lepekkin's travels, tom. i. p. 38. Pallas, travels, tom. i. p. 163.

in general more ingenious implements used. As we cannot, without transgressing the limits of our plan, indulge ourselves in very circumstantial details, we will only endeavour to point out some eminent instances to shew how diversely this culture is prosecuted in different regions of the empire.

In the government of St. Petersburg husbandry is the business of the RUSSIANS and FINNS, who here inhabit together the open country and the smaller towns; and though agriculture in this province, as well from natural difficulties as the proximity of the residence, is not properly the main concern of the inhabitant, yet the account of it will afford an instructive example, as both nations conduct it generally by methods handed down to them by their ancestors, and we are therefore enabled to see the variety of their proceedings in a lively contrast. Even in their dwellings a great difference is already apparent, as the Russians live together in villages, but the Finns singly, or by families, in what are called scattered crews. The former have the advantage of mutual assistance and of an incitement to emulation in skilfulness and industry; the latter state is preferable in this, that the fields lie nearer to the habitation of the boor, which is a saving to him of much time and trouble. Villages are seen throughout Russia, as among all the nations who have taken their agriculture from the Russians; their magnitude is often very considerable;

able; and as they consist usually of only one long street, the fields are frequently at a distance from them. Whereas the Lettes, Esthonians, and Finns universally dwell in dispersed gangs or solitary hovels, of which several are rarely seen together.—If we, farther, take the effects of national character into our account, the difference between the russian and finnish agriculture is still more striking. The russian boor generally labours only his old arable lands, whereas the finnish peasant strives to lessen his work at the expence of the forests. The finnish implements of husbandry are, if possible, more light and simple than the russian. Thus the Finns use only the branch-harrow, and not unfrequently nothing more than the rake instead of the knife-plough. Their little country carts are not, as with the Russians, on two, but only one axletree, the wheels whereof are never shod with iron; and, instead of this miserable vehicle, they very frequently employ only a couple of poles fastened at one end to the two sides of the saddle and the two other ends trailing on the ground.

Great as the difficulties are, which an inclement sky and the not very fertile soil oppose to the progress of agriculture in these northern provinces, yet they can give no incitement to the activity of the rustics of these parts, whose carelessness would announce to the ignorant spectator the most benign atmosphere and the most luxuriant soil. The rural occupations, which here in general demand the
greatest

greatest punctuality on account of the rapid vicissitudes of the seasons, usually begin in the middle of April, and last till towards or perhaps extend into October. As the harvests here without manuring would turn out but very scanty, this therefore certainly belongs to the number of agricultural employments; but seldom are the little insignificant stocks of cattle sufficient to this purpose, though they endeavour to increase the muck by straw, and artificial means of compost are either not at all employed or only on particular fields of the manorial demesne. To supply the want of this necessary material, many estates divide their arable land into four, five, or six fields, whereof two or four lie fallow, in order to recruit by a longer repose the vigour which they cannot obtain by manure; the fallows in the mean time serving as cow-lares acquire by that means some degree of manure. In such circumstances it is not surprising, that the boor chooses rather to cultivate the forest-grounds, the profits arising from which being certain, and the damage only falling on the succeeding generation; yet there are also landlords, as we have already observed, who, by exterminating the morasses and their wretched growth of wood seek to increase their arable land to their own detriment and for the good of the whole. — Of the several kinds of grain that are here cultivated, the winter-rye is the most frequent and the surest, as being seldom liable to a general failure.

The

The seed-corn yields, as is the case with all the other fruits of the field, the domestic harvest, and on ordinary grounds repays the sowing four to seven fold. The rye does not arrive at full maturity every year, and then it yields meal indeed, but likewise very bad bread. It is necessary to plough twice for all sorts of grain, but for the winter-rye thrice. The harvest commences towards the end of July, and lasts till some days in September; the corn is cut with sickles and bound up in small sheaves, which are set up in circles of 10, leaning against each other, and covered with one inverted sheaf at top. When they are air-dried, they are put in high shocks on wooden stages, where they remain till they are carried to the kiln to be hardened. — As this custom of crisping the sheaves previous to the threshing, is common throughout Russia and even in Siberia; it will not be superfluous to give a short idea of that process and of its utility.

The russian corn-kiln, *ovin*, consists of a wooden shed made of barks driven together, having a few apertures with shutters in the sides, and furnished within with several cross poles. Adjoining to the shed an oven of brickwork is made in the earth, from which flues run into the kiln. When the corn is to be malted, the sheaves are hung upon the poles, and a slow fire is kept in the oven, the smoke of which penetrates into the kiln, making the sheaves to reek; the vapour escapes by the
side-

side-holes, which are opened at pleasure. In some provinces the kiln is somewhat differently constructed *; but the practice of malting the corn in this manner is universal, and is of great and various utility. The grains are indeed smaller for the drying, but it preserves them from corn-worms, renders the grain fit for keeping in granaries, and even incorruptible in long voyages at sea, without rendering it unserviceable for sowing. This advantage of the russian grain is however procured at a great expence of wood; for which in some parts perhaps moss-turf might be employed with the same effect. The corn being malted, it is carried by the Finns into the kiln itself, but by the Russians threshed out on the floor or on the ice, with small light flails, and purged by casting or winnowing. The generality of countrymen keep their grain in the corn; only some of them

* In most parts it is still more simply constructed, and commonly consists of nothing more than a pit in the earth, over which is built a slight hovel of barks wedged together, into which the smoke and the heat are drawn. The Tartars on the Kama and Volga, instead of this hovel, only place a pyramidal frame of thick poles over the pit. These corn-kilns in Livonia are on the best construction; a description whereof, which would be here too long for insertion, may be seen in Hupel's *topographischen nachrichten*, tom. ii. p. 294, & seq. where is likewise a proposal for an improvement in these buildings, which as appears from Friebe's observation on Livonia and Esthonia, p. 142, is already in practice with several land-owners.

grind

grind all their rye immediately into grist-meal. — Doubtless the climate is little advantageous to agriculture, yet there has seldom been an instance of general failure; but every year the harvest falls short in one circle or another. A single boor can at most conveniently labour two or three desätines of arable land; and a numerous grown-up family has work enough with four or five desätines*.

Having given these specimens of agriculture in the northern regions, we will proceed to deliver a short description of the UKRAINIAN husbandry, which in many particulars differs widely from that followed in Great-Russia. A milder climate, and a more compact and fertile soil, render other culture and other implements of tillage necessary here. The ukrainian peasantry sow far more summer-grain, because the winter-sowing in their wet and snowless winters is apt to rot and so to render the harvest doubtful, which in the northern provinces is exactly the reverse. Instead of the light hook-plough, they use the large heavy ukrainian plough, and for the horse which in Russia is almost the only beast used for ploughing, here oxen are put to, of which sometimes eight are seen harnessed to one plough. Besides this plough they employ likewise a curious variation of it, called rallo, and which cuts the ground with five or six iron teeth

* Georgi, beschreibung des St. Petersburg gouv. p. 566 —585.

at once. In order to hasten the spring-sowing, the boors commonly plough their fields in October, and as soon as the ground is thawed, which happens in March, the seed is strewn into the earth without farther preparation; at first, poppy and anise, afterwards in succession barley, wheat, oats, pease, linseed, millet, flax, and hemp; the buckwheat is sown on light and dry lands. In districts with no wood and few inhabitants, the steppes or overgrown fallows are repeatedly ploughed, and such fields again rendered useful, receive at their first sowing anise or millet, which require a firm soil, or even buckwheat when the soil is juicy and fertile. In the following year they are sown likewise with millet or wheat, in the third with oats, in the fourth with rye, and then they are left again to lie fallow for a few years. By such culture repeated annually for some years, the steppe is commonly changed into a beautiful pasturage, covering itself with sweet nutritious herbs. Forest lands, which are so frequent in the northern governments, are here scarcely ever seen; as these southern regions have not wood enough for kuttis-burning or for the rhodings; instead of these the numerous herds of cattle which pasture on the fallows, yield far more manure to the ground, than it receives by these means in the northern provinces which are poor in cattle. An artificial improvement of the ground is only in use on manorial estates, and even there not much, as the harvests

vests

vests are sufficient for the wants of the inhabitant without it. An indifferent soil will return the sowing of winter-corn five to seven fold, and of the summer-corn from five to ten fold.

When the corn is reaped, it is not immediately malted, but after it has been air-dried on the field in sheaves, first on floors under the open sky, then cleansed or washed, and lastly dried by the sun or on the oven. As the breeding of cattle forms the most part of the ukrainian husbandry, it is usual to assign a quantity of wet threshed corn for winter-provender in a proportion of one half to the store of hay. The rest of the corn is kept in barns for the ensuing year, or put unthreshed into earth-holes lined with straw and covered at top with straw, bushes, and earth, for protecting the corn within from damp and frosts *.

These examples will be sufficient for giving a notion of the business of agriculture as well in the northern as the southern provinces; both alike in this, that in general much is left to Nature, and that her operations are neither seconded by great labour nor by refined industry. On the whole the agriculture in all the NORTHERN provinces is the same; only where the proprietor interests himself in the success of it, it is managed with greater care, and this seldom happens in Russia proper,

* Beschreib. der statth. Kharkof, im journal von Russland, tom. ii. p. 102—106.

whereas in the white-russian and livonian governments it is frequently the case. It is true that in the latter the above described simple instruments are in use, but they are employed with greater industry and exertion. Here is more ploughing and more manuring, and even artificial improvements of the arable lands are not unusual. With a moderate degree of fertility of soil, the winter-rye in the government of Riga produces a return of its sowing from five to twelve fold, the barley eight-fold, and the winter-wheat ten-fold; and on rhœdings and kuttis fields the produce is naturally still greater *. In the white russian provinces this industry is still farther encouraged by a much more prolific soil; as here, for example, in the government of Mohilef, the ordinary harvest with seldom and little dunging is twenty-fold. The countrymen, according to the testimony of a farmer of the place †, are industrious and have a turn for agriculture, and the implements of husbandry are completely adapted to the soil, and admit of no improvement. The laying down the fields, the harvests, and the keeping of the fruits of the earth are managed with the greatest care; but a material defect here presses hard on rural œconomy, and that is, the custom that every proprietor, besides the land which his boors hire of him with

* Friebe's bemerk. ueber Liefland und Esthland, p. 135.

† Aufwahl œkonom. abhandl. tom. iii. p. 167.

money,

money, feudal services, or payment in kind, lets out the rest to such as choose for the third or the fourth sheaf. These people, who only look to the momentary advantage, never manure, nor ever let the ground have respite ; accordingly the best soil is very soon exhausted : besides, by this method, the cattle lose their pasture, and the young boor can find no opportunity for settling himself.

The description which we have given of the ukrainian agriculture, is suited in general to all the SOUTHERN provinces, with this limitation, however, that in most of them it is far more negligently and imperfectly carried on. The greater fertility of the soil and a milder sky render many precautions unnecessary which the ruder climate of the northern governments extort from the slothfulness of the inhabitant. In these temperate regions there is seldom any ploughing and still seldom or never any manuring : the breeding of cattle forms the chief part of their husbandry, and the methods of culture are generally more dignified and refined *. — Pallas has given a sample of SIBERIAN agriculture in mentioning the fruitful districts of the Yenissey, which we before adduced. Here the boor has certainly a light work of it, as he is so liberally seconded by nature.

* Pallas, tableau de la Tauride. Boeber's œkon. bemerk. ueber Ekatarinossaf, in den preisschriften der œkon. gesellschaft, tom. i. p. 196. Astrakhanische landwirthsch. Auswahl. œkon. abhandl. tom. iv.

There is no need of manuring in these and similar districts, since the ground, if only left fallow the third year, continues bearing for fifteen years and upwards; and because there is everywhere fresh and unbroken ground which the boot can always turn up into arable fields unmolested. The kind of corn most commonly cultivated here are summer-corn and winter-rye; the winter-wheats are not known in any part of Siberia, and besides the above fruits of the earth, the siberian boot concerns himself but little about other cultures*.

Ere we close this article we must take some notice of the Tartars, the Votiaks, and the Tschermishes, who not only inhabit provinces that are partly the richest in corn, but advantageously distinguish themselves from all the husbandmen in the russian empire by their application and industry. The Tartars in the governments of Ufa and Kazan are wont to lay out their grounds in the proximity of every village, and to divide them in common into three fields, of which one is left annually fallow, and on it the cattle graze. In this manner the fallow gets a kind of manure, which for these generally excellent grounds is sufficient, and by which they are kept for many years consecutively in proper order for the cultivation even of wheat. If the fertility at length declines, and there is no steppe in the vicinity fit for tillage,

* Pallas, travels, tom. iii. p. 5.

it not unfrequently happens that the people of a whole village break up their wooden houses and transport them to another place ; a practice which is imitated even by the russian boors, particularly in Siberia. Though the Tartars still use the heavy plough for breaking up new steppes, yet they have adopted moreover universally the light, cheap hook-plough, which requires fewer draught-cattle ; but they differ from the russian villagers in this particular, that they dry by fire the sheaves, not in regular corn-kilns, but in open pits, over which poles are placed together in a pyramidal form. The agriculture of the Tscheremisses, Votjaks, and Meschtscheriæks on the Kama and Volga, is very like the tartarian ; only they have the custom of burning away the straw in still weather, which they purposely leave high standing at the harvest before they plough for sowing, whereby the ground is both dried and receives some degree of manure. In dry steppes, however, their method is to plough in the seed, or to strew it on the fallow ground previous to the ploughing, and they are convinced by experience that it thrives better in this way*.

In spite of all the defects of russian husbandry, of which, from the foregoing account we cannot form a very high idea, the PRODUCTS OF THE AGRICULTURE are so numerous and important,

* Pallas, travels, tom. ii. p. 6. tom. iii. p. 492.

that they not only fully answer the demands of home consumption, but likewise constitute by far the most considerable article of exportation. To reduce the great variety of these objects into an order that shall render them easy to be surveyed, we will first notice the several species of corn, then the provender-herbs, and lastly the most remarkable vegetables for fabrication and trade, the culture whereof either is actually carried on, or might be introduced to great advantage.

Of the several SPECIES OF CORN the RYE is the most generally cultivated, and both the winter and the summer-rye succeed equally well in the tracts of land that lie not farther to the north than the 60th degree of latitude; in which are only to be excepted the particular districts that are absolutely either too wet or too dry. — Wheat is more cultivated in the middle and southern governments; the winter-wheat, however, seldomer, and in Siberia not at all. In the government of Ekatarinoflaf they cultivate likewise the ARNAUTAN wheat, which yields a fine flour tending to yellow, and its produce there is so abundant, that in good years it commonly returns fifteen corns above the sowing*. As a product brought hither from mild climates, it requires a warm and dry soil, and therefore succeeds only in the southern

* Preisschriften und abhandl, der œkonom. gesellschaft in St. Petersburg. tom. i. p. 198.

provinces.

provinces. Turkish wheat or maize is raised in the confines of the Terek and in Taurida. — BARLEY is a main product in most governments where the wheat succeeds, and even in some others; as the consumption of barley-meal in Russia is very great: though it is only the summer-barley that is generally cultivated. — Also OATS are commonly grown, though they are not everywhere alike productive; they are likewise raised partly for the consumption of the people, in this case being prepared into meal, and eaten as porridge. — Of these four kinds of corn Russia annually exports to foreign countries a considerable quantity, especially from the livonian ports. In the year 1793 these exports amounted, both in corn and meal, to the value of, in wheat 1,490,000, in rye 1,379,000, in barley 236,000, and in oats 17,000 rubles.

The remaining sorts of corn are generally sufficient for the home demand, are mostly susceptible of a greater culture; and therefore there is no exportation of them. MILLET is pretty general; but SPELT, or bear-barley, is but little cultivated. Buck-wheat is very plenty both in Russia and in Siberia; and in this latter part of the world is cultivated almost throughout in a very singular manner. It is sown here in large fields on a fat steppe newly broke up, the sowing being thin and rather late, that it may be the less injured by the night frosts. After one such

flight sowing the ground is made for five to eight years, and yields all this time above a produce of at least ten to fifteen fold. That is, there is shed at the reaping a sufficient quantity of seed upon the ground, which does not corrupt the whole winter through; nothing farther then is necessary to be done than to harrow the field once, in order to be able again to reap at the next harvest, and this may continue till the fecundating quality of the soil is quite exhausted. No other kind of corn, consequently, is better suited to the sluggish siberian country-people; who have at the same time the additional alleviation of being able to mow the buck-wheat with scythes, to thresh it out upon the spot, and instead of carrying away the straw, to burn it on the ground. The WILD siberian buck-wheat multiplies at such an extraordinary rate, that it springs spontaneously wherever a plot of ground is made barely useful; and in places where corn or hemp is sown, it often gets the upper-hand and choaks those sowings. Being therefore considered as a weed by the siberian boors it is little or not at all eaten, though it affords a very well-tasted food, and is easily made into grist. Only the Beltirs and Koibals gather it, and it is likewise sometimes sown by the Katschintzes*. — MANNA† grows almost every

* Pallas, travels, tom. ii. p. 365. tom. iii. p. 351. 383. 395.

† *Tessuca fluitans*.

where

where in Russia on meadow-grounds overflowed, particularly in the governments of Riga, Pskove, Polotsk, Novgorod, Tver, Smolensk, &c. but not thick enough to be gathered in quantities, as, for instance, in the government of Mosco. The æconomical society of St. Petersburg has therefore offered a premium for an answer to the question, how the culture of this useful vegetable may be promoted, which not only affords a very white and well-tasted grist, far superior to that of the fine wheat used in Russia, but as a herb is an agreeable and wholesome food for many of the domestic animals. The marshy districts of the before-mentioned governments would without doubt be the most advantageous for this species of culture. — RICE also is among the products, which the Russian empire might produce in good quantities. This plant requires a warm climate and a flooded soil, and can therefore only be cultivated in the most southern provinces. In the neighbourhood of Kitzliar the rice succeeds extremely well, and probably it would flourish likewise on the coasts of the Caspian, between the mouths of the Terek and the Volga; the islands situate in the mouths of the Don and the Ural are equally adapted to this purpose. But for this culture the best parts of all would be the shores of the Kuma quite along to its mouth, where the nomadic Tartars, who well understand the cultivation of rice, might
bend

bend their inclination that way*. Hitherto the quantity annually obtained is very trifling, and Russia pays for the purchase of this article of food no very small sums.

The culture of POTATOES, that uncommonly useful vegetable, which, from its general serviceableness, deserves to be mentioned immediately after the several species of bread-corn, is employed in Russia only in a few governments, and chiefly there among the foreign colonists. The Russians cultivate it but little; prejudice and plenty of other provisions prevent the progress of this new species of culture: yet here and there the introduction of it has been successfully begun, particularly in those parts where, from the rudeness of the climate corn does not always thrive; and namely in the government of Archangel, where they bear the cold extremely well, and in proportion to the attendance bestowed on them, yield an increase of from thirty to fifty fold, when raised from native seeds†.

GRASSES AND FODDER of all kinds everywhere abound in the Russian empire; but these products cannot strictly be reckoned among the species of culture. Spacious meads are generally seen in all parts, though here and there particular districts

* Guldenstadt's akad. rede, &c. § 54.

† Aufwahl. œkon. abhandl. tom. i. p. 253.

may be in want of them ; but frequently they are totally unoccupied, either because there is no need of hay, (yet this, from the long winters in the northern governments, forms a very important and indispensable article in a regular and orderly farm,) or because the people are too lazy to get it in. It is precisely the nomadizing nations with whom the graziers business is carried on to the greatest extent, who never mow their meadows, but let their cattle graze upon them the whole year round. Even where the meadows are mown, it is usually done only once ; as the boor seldom thinks of gathering the latter-math or after-grass, and frequently the labours of the field or the weather will not allow of it. In the neighbourhood of large towns, or in parts where troops of horse are quartered, the hay is gathered in, however, with greater care, and forms not unfrequently a material branch of sustenance. Almost all the meadows are common lands, and it would be of no use to inclose them, while there is such a quantity of ground beside unoccupied. — As so little pains are taken to collect the hay that grows wild, it is the less to be expected, that in Russia artificial meads are made or grasses raised. Fortunately for her, however, benignant Nature so amply supplies this want, that in most parts no human industry is requisite. Many of the Siberian steppes are so richly clothed with wholesome and nutritious grasses, that the better sort of farmers

farmers in the interior of Russia, who have been inclined to lay out artificial pastures, have no need to write for foreign seeds, but only to use the hay-seed from the latter-math of the steppes. Spurry, alpine, hedyfarum, numberless kinds of clover, podded grasses, starworts, &c. are here universal, and these herbs have the advantage that they bear any climate*. In many parts of the empire the poor pasturages might be improved in this manner by culture; but the thought of it is still so foreign to the russian farmer, that it will require more than one decennium at least before we may entertain the hope that any attention to this useful object will become at all more general.

Of the various branches of agriculture none yields more material products for exportation than the culture of **VEGETABLES FOR THE USE OF MANUFACTURES AND COMMERCE**. Out of the multitude of objects of this nature, the first we shall select is **HEMP**, the exportation whereof makes by far the most considerable head in the lists of russian exports, and is held to be the best of all the european sorts. By comparing the enormous consumption of this necessary material in the empire itself, with the great quantity which is annually shipped off, it is manifest beyond all doubt, that no produce of farming, excepting rye, is of greater consequence to industry and trade. Hemp

* Pallas, travels, tom. ii. p. 75.

is raised and managed in Russia everywhere in the ordinary methods; the boors are apt to soak it in rivers, lakes, and large ponds, by which practice the water is spoiled and the fishery diminished; a nuisance of such importance as to call for the interference of the magistracy. Even the WILD hemp, growing very plentifully in some parts, e. gr. about the Terek and in the uralian mountains, is gathered in considerable quantities. In Siberia it is more rare, but it is found about the Volga, principally in places where towns have formerly stood. The women of the Kozaks and Tartars are wont to gather it in autumn, when it has shed its seed, and begins to die away; it being eaten by these people as well as by the Baschkirs, Barabintzes, and other nations, in various ways *. Russia exports her hemp partly raw, partly wrought into sail-cloth, facking, cables, and cordage, &c. as also the seeds either raw or pressed into oil. In the year 1793 the export of these articles amounted to upwards of 8,808,000 rubles, in which the hemp-oil is not included †.

* Pallas, travels, tom. i. p. 356. tom. iii. p. 266.

† The amount of this exportation more accurately specified was in hemp and heads of hemp, 6,066,615 rubles
Sail-cloth, facking, raventuch, 2,408,670
Cables and cordage - - - - - 259,590
Hemp-seed - - - - - 74,041

8,808,916 rubles.

Not

Not less important is the culture of **FLAX**, which likewise is raised in great quantities, and of excellent quality. In numbers of districts the flax-grounds are not inferior in dimensions to the corn-lands; the most and best flax is produced in the governments of Vologda, Pskove, Novgorod, Riga, Mohilef, Tver, Polotsk, Viatka, the confines of the middle Volga, and in the parts about the Oka and Kama. In some provinces, for example in the districts near the Kama, the fine **VALAKHIAN** flax is cultivated, first introduced by the polish colonists; in the borders of that river it grows to the height of seven spans, and yields a far better yarn than the common*. A successful attempt has been lately made with the **ITALIAN** flax in the government of Ekatarinoslaf. The seed for this purpose is written for to Bologna, and it thrives so well, that the stalks rise to the height of more than five arshines, and even with very defective management gave an extremely fine texture†. Both the common and the **SIBERIAN** flax are found frequently **WILD**; the former, e. gr. in the steppes about the northern Ural, the latter on the shores of the Volga, near Tzaritzin and in other places‡. — Among the plants growing wild, and yielding fibres like flax or hemp, is also the

* Pallas, travels, tom. iii. p. 492.

† Preisschriften der œkonom. gesellsch. tom. i. p. 200.

‡ Lepekhin's travels, tom. i. p. 267. Herrmann's beyträge, tom. iii. p. 140.

common

common and the siberian STINGING-NETTLE*, which are found in great plenty and especially on the uralian mountains. The Baschkirs, the Koi-bals, the sagayan Tartars, &c. prepare yarn and weave linen of them; to the same use might the hop-bind be employed, which in Russia is entirely thrown away.

The management of flax has nothing peculiar in it; it is picked, as elsewhere, cleared from the seeds, soaked in water, and bruised by beating with wooden beetles. This product, next to hemp, forms the greatest article of exportation; most of it goes abroad raw; a considerable part is wrought up into linens, diaper, canvas, and the like, and even the seeds are exported partly in their natural state and partly as oil. In the year 1793 this exportation, exclusively of the oil, amounted to 7,220,000 rubles †.

Among

* *Urtica dioica* and *cannabina*.

† Namely, in flax and flax-heads to

the amount of	- - - - -	4,504,100 rubles
Linen, diaper napkins, &c.	- - - - -	1,678,701
Linseed	- - - - -	1,037,513
		<hr/>
		7,220,314

How advantageous the culture of this plant is may be seen from the following instance. In the year 1788, the owner of an estate in the government of Pscove gained from five chetverts and three chetyeriks of seed twenty-two berkovets of flax, whereof eighteen raw and four wrought were sold; when the net profit, after deducting the sowing, came to 727 rubles. Aufwahl. œkon. abhandl. tom. iii. p. 131. — Of all the sorts of flax

Among the products of russian agriculture, cotton also demands a place; not so much from the inconsiderable quantity that is raised of this useful material, as on account of the possibility of increasing the culture of it, to which many parts of southern Russia are completely suited. As yet trials have only been made to cultivate cotton about Astrakhan and Kitzliar, on the Terek; but there are climates and soils likewise in other circles of the caucasian government, in Taurida, in the southern part of the government of Ufa, &c. not less favourable to the culture of this plant. The shores of the Kuma, of the Kalais, of the Yegorlik, and of the Manytsh, might, with a larger population, produce great store of it; and the wives of the Tartars in the governments of Caucasus and Kazan are very skilful in the treatment and the spinning of cotton. The annual expenditure for this product, raw or wrought, is so considerable, that it cannot be thought superfluous to take no-

flax produced in the russian empire, the livonian is reckoned the best. But even there it thrives not in all parts equally well, but principally in the territory of Marienburg and the surrounding parishes, wherefore by way of eminence it derives its name from the former. Several governments, e. g. Pskove, Polotsk, &c. produce a flax of equal quality, which is frequently sold under that name. The method in which it is classified in Riga, the grand mart of this product, according to its packs, may be seen in Hupel's topograph. nachr. tom. ii. p. 335.

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tice here of some WILD-GROWING SILK-PLANTS, producing a similar material to cotton, and might be gathered and manufactured to a like purpose.

Here two plants particularly deserve mention, known among the botanists by the names of *cynanchum acutum* and *apocynum maritimum*. Both grow wild in the very worst soils, the clay or luteous sand of the saline astrakhan steppe, from Tzaritzin to Astrakhan, and in breadth from the Don quite to the other side of the river Ural. The husks of the former plant contain a silky floss, which may be easily cleared from its pretty large seeds by concussion, yielding an excellent delicate flock inferior in no respect to that prepared from the syrian silk-plant, and may probably be useful to every purpose, to which the latter is employed. The more this flock is teased and carded the finer and more fleecy it becomes; it yields a good warm down, and seems eminently adapted, from its lightness and elasticity, for comfortable linings or wadding to furtouts and cloaks against the frost. In carding it will not easily mix with cotton, but by this means it at length gets a greater consistence, and might so perhaps be fit for spinning. As the seeds of this plant ripen not till late in autumn, of course it cannot be raised in northern climes where the summer is short. But it would easily and abundantly multiply in the south volga steppe, where it might be one of the useful cultures which should be recommended for the employment of all

that unfruitful salt steppe, overgrown with worm-wood, and totally unfit for the ordinary uses of agriculture. — The latter of the two plants abovementioned grows more sparingly and only in spots, but is in particular plenty about the Elton-lake, in some places on the right shore of the Volga and towards Kitzliar. It bears double pods or husks, full of an elastic beautiful feed floss, which by teasing is likewise easily separated from the seeds.

Besides these two, the Russian empire also possesses several other wild-growing silk-plants, all holding out to the attentive observer an equal utility. Two of them are found in all parts of the temperate region, as also out of Russia, and in the rest of Europe; namely, that called in English swallow-wort or silken cicely, *asclepias vincetoxicum*, Linn; and the *asclepias nigra*. The latter is indeed somewhat more rare, though both grow plentifully enough in the herbaceous regions of the Volga between Simbirsk and Saratof, and in the governments of Kharkof and Ekatarinof. Both will bear the northern climate, and even flourish in open air in the gardens of St. Petersburg. Two other silk-plants, the *asclepias sibirica* and *aurica*, are peculiar to the middle temperate region of Siberia; they grow in the confines of the Irtysh, the Oby, and the Selenga, and are also reckoned good in gravelly complaints. A still more extensive country belongs to the silk-rush or

meadow-wool *, which covers all the useless swamps in the northern governments, and is found plentifully in Siberia. In the month of July an immense crop of this plant might be gathered, the stalks whereof mingled with a fourth part of wool or cotton, produce thread very serviceable in weaving linen, cloth, or stockings. — Besides these plants there is still a considerable number of shrubs and trees, the seeds whereof are clothed in a substance similar to cotton †; but the thread from this material is generally too short and too harsh to be used in spinning and for stuffs. It would nevertheless be very serviceable for warm wadding and felt: nay it might be even worked up into hats by mixing it with wool; or, mixed with rags, would serve to make paper ‡.

* *Eriophorum polystachium*, LINN.

† Such as principally: *epilobium hirsutum*, the typha, some species of the poplar, namely, *populus tremula*, *nigra* and *alba*, and several ozers, as *salix pentandra*, *cinera*, and *caprea*, LINN. The *epilobium* is found in all the northern provinces; the little lakes are generally almost covered with the typha; the first kind of poplar abounds over all Russia; the second and third are almost solely confined to the parts adjacent to the Don and the Terek; the two first kinds of ozer are not unfrequent in low and marshy places; the third grows only on mountains. *Guldenstedt, ubi supra, sect. 48.*

‡ Pallas, ueber die russ. seiden pflanzen, in den preisschriften der oekonom. gesellschaft. tom. 1. p. 162. *Guldenstedt's akad. rede, &c. sect. 47.*

Now that we are on the subject of the products from the vegetable kingdom that furnish materials for the loom, it will not be inexpedient to enumerate the plants employed in the mystery of DYING. Russia, as well as some other European countries, neglects the fine dying materials, which are partly procured from remote parts of the world for the service of domestic industry; but she also begets a multitude of wild-growing herbs, flowers, roots, and mosses used in dying, the more sedulous collection or proper culture whereof might render unnecessary these foreign products. Madder, or the red dye, grows wild, but sparingly, on the banks of the Oka, near Riasan and Arsamas, on the borders of the Volga, in the confines of Sybran and Saratof, and in great quantities and of superior quality about the Samara, in Taurida, on the Terek, and in several districts of the caucasean government. This useful plant is nowhere properly cultivated; but in the regions of the Terek, along the Kura and Kuma, it is gathered in considerable abundance. As this however is not near sufficient for the demands of the inland manufactories, and Russia is obliged annually to make considerable purchase of red dyes, it would certainly be worth while to attend to the plantation of this vegetable, which in the foregoing districts would produce as good a commodity as that procured from Holland and Erfurt, if it were only gathered in
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in autumn and not dried in the heat of a subterranean oven, but under sheds in the open air. The culture of madder is still in another respect of consequence to Russia, as in the collecting alone of the wild plants much time is lost that might be more beneficially employed. Two men who should cultivate madder in the above-mentioned districts, where the soil and the climate are so propitious to it, would easily gain as much by it, as ten do now, who perhaps will shortly have nothing more to get, as by their present manner of proceeding this useful plant will very soon be entirely eradicated. Likewise in the governments of Ufa, Kazan, Voronetch, Ekatarinossaf, Kharkof, Braglaf, &c. as well as in Little-Russia, the red dyes would thrive in a moist and fruitful soil. In several of the provinces we have specified there are other wild plants resembling madder; but, except the *mariona**, sufficiently known among the Kozaks of the Don, they are not entitled to any particular notice †.

After indigo the principal material for dying blue and green is *WOAD*; Russia buys of both every year to a considerable amount. The plant

* *Cruciata palustris maxima*,

† For example: *galium boreale*, *mollugo*, *asperula tinctoria*, &c. The organ, organy, wild, or bastard marjoram, or wild mint, in rufs *dufchitza*, a very common plant, yields also a fine crimson red, which might be successfully employed in dying. Guldenstedt, akad. rede, &c. sect. 51.

which produces indigo grows only in India, and therefore requires a much hotter climate than Russia anywhere possesses; consequently it is the more necessary to multiply the woad-plantations, as woad may not only supply in many cases the want of indigo, but as the blue of the former in fact deserves the preference. It is the more to be expected that the culture of this plant must be attended with good success, as both the real woad*, and a very similar variation of it † are seen WILD in several of the southern governments. The former grows spontaneously on the left shore of the Volga near Syfran, about Penza, near Omsk in Siberia, but most plentifully in the Ukraine, and in the territory of Mosdok; the latter likewise abounds on the Oka, the Sura, and the Volga. In the governments of Penza, Saratof, and Voronetch, considerable woad-plantations have already been made for some years past, which therefore probably may afford seeds sufficient for their farther propagation ‡.

SAFFRON, which is used both as a colour and as a drug, and is likewise an article of importation, grows WILD about the Terek, in the governments of Voronetch and Ekatarinoflaf, in Taurida, and especially in the caucasean mountains about Mosdok. The spring-saffron, growing in the first-

* *Isatis tinctoria*.

† *Isatis lusitanica*, LINN.

‡ Herrmann's statistische schilderung, p. 238. Guldensadt's akadem. rede, &c. sect. 52. Pallas, travels, tom. i. p. 75. tom. iii. p. 617.

mentioned

mentioned district, is fit for little as a dye, and as a drug for nothing; but, the autumnal saffron, gathered in Caucasus, is serviceable in both respects, and bulbs might therefore be obtained here as well as from Persia, which there is no doubt would succeed in the southern circles of Caucasus and Taurida. — The consumption of SAFFLOWER* is nearly as common; it being employed by the silk-dyers in preparing the flesh and rose colours. Russia still continues to buy this commodity from the foreigner, notwithstanding that the plant thrives perfectly well in the gardens at Toropetz, Mosco, Tzaritzin, Poltava, and other places, so that, excepting the northern provinces, it might be raised almost everywhere.

Besides these four capital species, there is in Russia still a vast variety of more vulgar dying plants which might be employed to great advantage. Thus, for instance, a blue colour is got from the ash-bark, with which experiments ought to be made, as that tree is in general very plenty, and in some districts there is even a great surplus of it. For red colours the russian empire has already many materials, and might have many more; but in a far greater quantity still are the plants for yellow dyes, which moreover mostly grow wild. By these materials various shades, and by a mixture with the reds even an orange colour might be produced,

* *Carthamus tinctorius*.

which would render numbers of expensive foreign drugs for dying quite unnecessary*.

Among the vegetables for fabrication and trade likewise hops and tobacco, from their large and general consumption, hold a very important station. Both are raised in Russia, but not in sufficient quantity to satisfy the demands of domestic industry or consumption. The HOP is cultivated not only in gardens and fields, but even grows WILD in most districts of Russia and Siberia, particularly in Little-Russia, on the uralian mountains, on the Altay, and in Taurida; notwithstanding which, a greater or less, though always but a trifling quantity is imported. — TOBACCO, indeed, as yet, according to the customs of the country, is not one of the general necessaries of the lower classes of the russian people †; however, the consumption of it is by no means small, and the importation of this product always by far overbalances the exports. In the year 1793 the former at St. Petersburg alone amounted to upwards of

* Guldenstädt's akademische rede, &c. § 51—54.

† The practice of smoking tobacco was held to be a sin at the end of the last century in Russia, and the clergy looked very grave upon the matter when Peter the great in the year 1698, granted the monopoly of the importation of tobacco to the marquis of Carmarthen and comp. In the year 1762 the monopoly that had been granted to count Schuvalof in 1759 was abolished, and shortly afterwards the regulations mentioned above for the farther propagation of this culture were promulgated. Herrmann's statistische schild. p. 297.

47,000 rubles, and the latter, from all the ports of the empire, barely to 20,000; yet there is reason to suppose that the consumption of the inland tobacco must have very much increased, as Guldenstädt states the exportation of this product in the year 1768 at 21,000, but the whole of the importation at 108,000 rubles. The culture of this plant, become by our prejudices and habits of so much consequence to industry and commerce, has been profitably carried on since the year 1763 in several districts of the empire, when the government distributed the seeds, granted premiums, and published the methods of proceeding best calculated to that end*. Most of the tobacco is still obtained in the malo-russian governments, where the first attempts were principally made to encourage the cultivation; but also in other regions, e. gr. about the Volga and the Samara, and particularly by the Kozaks on the orenburg and siberian lines, this plant is much cultivated. The greater part of the russian tobacco is derived from american, but some from turkish and persian seed. In the generality of the southern governments, these plantations admit of being greatly multiplied.

The culture of the OIL-PLANTS ought justly to be an important part of agriculture in Russia, as the consumption of oil during the fasts is very great; but of the plants adapted to this purpose

* Ukase of the 11th of December 1763.

only HEMP and LINSEED are cultivated to any competent degree. Russia sends annually abroad a very great quantity of both, partly raw and partly pressed into oil; in the year 1793 the exportation of hemp-oil and flax-oil exceeded in value 697,000 rubles. But as these oils, on account of their unpleasant taste and smell, can only be taken as food by the lowest classes of people, and as the importation of fine oil still forms a very considerable rubric, it were certainly to be wished that the culture of those oil-plants could be more seriously adopted, which are either already in Russia and might be employed to this end, or after due trials might be successfully introduced. To the former belong: - the wild almond-shrub whose kernel yields a mild sweet oil, the poppy, the sun-flower *, the rape, or wild turnep †, &c. Besides these vegetables, several kinds of nuts are in some places used for expressing an oil from them. Abundantly as these and many other plants grow, particularly in the southern provinces, the employment of them is yet not by far sufficient to take place of the importation of the olive-oil, or the better sort of it, the oil of Provence. For some years past indeed several attempts have been made in the culture of the OLIVE-TREE in Astrakhan; but, though the hot summer agrees so well with this tender plant, the hard winter is

* Helianthus annuus.

† Brassica napus.

not less prejudicial to it, against which it cannot be protected by the utmost care; and it is now reduced to a certainty, that it will not thrive in these parts *. Whereas in the confines of the Terek the olive-tree grows wild, and in the southern mountainous part of Taurida it succeeds so excellently, according to Pallas's account, that the best kinds of it may be cultivated there †. That spot, however, being too contracted to be ever able, with the greatest cultivation of this useful tree, to produce a sufficient quantity of olive-oil for the whole empire, another plant, therefore, fully capable of supplying the deficiency of it, is deserving of the greater attention. This plant is the *SESAMUM* ‡, known in the north of Persia by the name of kuntschuk. Its seed-corns are about the size of mustard-seeds, and yield a very well tasted keeping oil, not inferior to the provençal. Russia has hitherto obtained this oil from Bukharia and Persia; but it has been shewn by experiments, that the sesamum plants flourish very well in the southern governments, and yield there as much and as good oil as in their native soil. As the culture of this plant, moreover, is very easy, and Russia by that means might supply

* Rading, oekonomiedirektor in Astrakhan, von der kultur des ölbaums in Russland. Auswahl oekon. abhandl. tom. iii. p. 305..

† Tableau de la Tauride, p. 35.

‡ *Sesamum orientale*.

one of her great wants, for the means whereof she is at present dependent on foreign countries, it should surely be an object of public concern to encourage the culture of sesamum by all possible means. The Armenians and Persians who reside in Astrakhan know how to raise this plant properly, and a sufficient quantity of the seeds might be got from Schamachy and Ghilan, from which places this oil is brought for sale to Astrakhan and Kitzliar *.

Russia, as well as other european countries, is deficient in SPICES; but not in an inferior degree to them does she possess several spicey plants, which are as poignant to the palate, and might frequently supply the place of those dear-bought foreign products. Here may be named, for instance, SAFFRON †, which, as has been before observed, is found of good quality growing wild in Caucasus, and might easily be raised in great quantities; again, mustard, capers, spanish pepper, and a considerable number of aromatic flowers, herbs, and roots, the description of which would be here too tedious. The WILD MUSTARD ‡ grows plentifully in the middle and southern governments; it would therefore be attended with no difficulty to raise the best sorts of it, and the

* Aufwahl ökon. abhandl. tom. i. p. 14. tom. iii. p. 306. Pallas, neue nordl. beytr. tom. i. p. 190. Guldenstadt's akad. rede, &c. sect. 95.

† Crocus sativus.

‡ Sinapis arvensis.

seeds

seeds might be procured from Germany and England. The **CAPER-SHRUB** likewise grows **WILD** about Kitzliar ; it might be propagated in the salt districts between the Kuma and the Terek. The Armenians of Kitzliar and Astrakhan are well skilled in the art of pickling or preserving the fruit of this plant, and the russian capers are of an extremely good taste when gathered small *. The **SPANISH PEPPER** is much cultivated about Astrakhan and in the districts bordering on the Samara, and it very rarely happens that this fruit is prevented from coming to maturity by a premature frost. The ripe pods are dried in ovens, pounded in mortars, and then vended in whole poods as a favourite seasoning with the common people †. Of the other seeds of this class we will only mention the **ANISE** and **CUMMIN**, as of both are exported annually to the amount of some thousand rubles.

Of **MEDICINAL PLANTS** of all kinds the russian empire possesses so great a store, that we need only refer to the new *Pharmacopœia Russica* as a proof of it, and to the custom-house lists, where apothecary-drugs form an article by no means insignificant. The trials that have been made at Mosco and in other parts of the empire to rear the genuine or chinese **RHUBARB** ‡ merit a closer ob-

* Guldenstädt's akad. rede, &c. 56, 95.

† Pallàs, travels, tom. i. p. 152.

‡ *Rheum compactum*, LINN.

commodity to buy, would be able to sell much of it abroad. Nowhere are salt-plants in greater abundance than on the low grounds about the shores of the Caspian, particularly round the bays and gulfs, and at the mouths of the Ural, the Volga, the Terek, in the neighbourhood of all the salt-lakes, great and small, and here and there in the flat part of the tauridan province. The inexhaustible stores of these regions, with the greatest consumption of it, would always prevent the necessity of artificially sowing the soda-plants, as in Spain and Languedoc; the only precaution that must be observed in the gathering of them is never to cut them till the seeds are so ripe as to fall out of themselves, and to give birth to a new crop. These herbs have hitherto only been used by the Kalmuks and Armenians for the aforesaid purposes; and Russia procures annually from France and Spain a no inconsiderable quantity of prepared soda *.

The facts that have been now adduced will be sufficient to give an idea of the state of russian agriculture in general. Defective as the practice of farming is in some parts, it nevertheless constitutes the most material branch of national employment, and its products the most important article of annual acquisition. The grand objects of

* Pallas, von den russischen sodepflantzen, im St. Peterfb. Journal, 1782, tom. iv. p. 110.

agriculture, corn, hemp, and flax, are the essential sources of the national wealth, as being not only adequate to the home consumption, but also supply the most copious articles of exportation. Russia is never obliged to purchase corn from foreign countries, though by the distilleries an enormous quantity of this most indispensable of all the necessaries of life is detracted from its proper and most useful destination. The deficiency suffered by some of the too northerly or unfruitful districts is supplied from the surplus of other more favoured provinces; and after deducting the twofold domestic consumption, there still remains every year a very considerable quantity for foreign markets. In the year 1793 the exports of the said RAW products, exclusively of all articles that have undergone any preparation, amounted to upwards of fifteen millions of rubles; a sum which is to be considered as the net produce of agriculture, and the total whereof is doubled by taking into the account the manufactured objects. With all the importance that we must allow to the russian agriculture from a view of these undeniable facts, it cannot, however, be affirmed to have attained to any great intensive perfection. If we reflect upon the monstrous population exclusively employed in rural industry, and the natural blessings enjoyed by the russian empire in so many districts of its wide circumference, the produce of the husbandry, important as it is upon the whole, we

shall find not by any means correspondent with those advantages. Agriculture can only then be said to flourish, when the greatest possible number of inhabitants are employed in it, and at the same time the greatest possible production is obtained. This is only the case with some few particular districts in Russia; and it cannot therefore be thought superfluous to conclude this head with some observations on the general impediments and disadvantages sustained by rural economy in Russia.

Every country is placed in certain natural and political relations which materially determine the activity of its inhabitants, and consequently the sources of its national wealth. A fertile soil excites mankind to agriculture, rich mines invite them to explore and work the metals, the vicinity to the sea inclines them to commerce; and where these branches of gain are not sufficient to employ the population, there, under certain favourable circumstances, workshops and manufactories spring up. In almost all civilized countries several of these sources of subsistence are occupied at once, but the national industry is generally directed to those objects to which nature has in a manner disposed them, and no measure would be more absurd than to attempt to divert the great mass of activity, by artificial means, from those objects, and direct it to others. The Russian empire is in its natural situation and frame so happily constituted, that its inhabitants are not only by no means

means impeded in the free exertion of their activity, but on the contrary are roused and encouraged, by the abundance and diversity of nature, to all conceivable modifications of industry. And yet agriculture is even here the surest and best source of the public prosperity; and most parts of Russia offer to this occupation in particular the choicest means and most extraordinary advantages. Unadvisable, therefore, as it would be to lay down any rule for the course of the national industry, or to confine it in any manner, it is necessary however to assign the first and most important place among the national employments to agriculture, and to encourage the extension of it by all practicable methods. — The means afforded to this end by theory as well as by experience are reducible to two leading principles, the universal validity whereof no one will ever doubt: first, that the greatest possible number of inhabitants should devote themselves to this activity; and secondly, that, with this activity, they should obtain the greatest produce at the least expence of time and powers. The former implies a careful regard to the distribution of the employment, the latter a prudent direction and regulation of it.

That agriculture, like every other general occupation, must have for its basis a numerous population*, is a truth that needs no demonstration

* By populousness, in contradistinction to population, is understood the proportion the number of people bears to the

here, but the consequences of it are of the utmost importance. As the multiplication of the people can neither be forced by artificial means nor yet by violent measures, nothing remains for a wise government to do but to provide that the present number of people be as much as possible employed, and in the most beneficial manner. The whole body of persons in a country whose abilities are applied to unfruitful employments, are exactly the same as if they were not in being; their negative existence is even a heavy burden to the country, as every individual who only consumes requires a productive individual whose labour must ensure the existence of the former. It is not the multitude of persons, but their adequate employment and the product of their labour that constitutes the

surface of the ground they live on. A country, therefore, having a great population may yet, not be populous, as the reverse may also be the case. — The word employment is here taken in a political sense, denoting that activity by which any thing is produced or required. Employment in general is of two kinds: it is either permanent and realizes itself to its object, as, for example, the labour of the countryman and the manufacturer: or it is not permanent, realizes itself to no object, and leaves behind it no token or value for which at any time afterwards a like quantity of labour may be had, as, for example, the employment of a domestic servant. The former is denominated productive, the latter unfruitful employment. Farther to unfold this idea would lead us greatly beyond our limits; what has been said will probably be sufficient in explanation of the above remarks.

wealth

wealth of the country ; and nothing is more manifest, than that of two countries possessing an equal number of people, that in reality should be called the most populous which applies a greater part of its inhabitants to productive employments, and that the equal proportion of the number of persons in both cannot long remain, because the population in the one will as rapidly increase as it will decline in the other.

Complaints of the want of a sufficient population are frequently heard in Russia, without inquiring whether in many districts this defect be real or only a consequence of the proportionately small, badly selected, or unequal activity. Nobody will deny, that the russian empire, even in its most populous provinces, is capable of a still stronger population ; but how much greater would be the wealth, how much more flourishing the condition of this country, if only the actual population were generally employed in the most advantageous manner to the welfare of the whole. In vain does nature present her copious stores, if sloth and ignorance refuse to employ them ; there are always in Russia many thousand and thousand square miles of the finest and most fertile soil, not inhabited but lying uncultivated ; again, there are always among its tribes numerous hordes of nomades, who shun every toilsome culture ; nay, even among the paramount nation, whose elevated and refined activity should hold as it were the balance of the rest,

rest, are numerous classes of persons, who are not only drawn off from agriculture, but whose employment is entirely lost to the country.

We cannot here be thought to speak of the armies, as in an empire of such wide extent, whose borders touch on so many foreign countries and seas, and whose relations are implicated in the fates of two quarters of the globe, must be kept up an armed force proportionate to its magnitude and internal strength to defend its vast possessions against attacks from within and without, and to be able impressively to assert its honourable station in the general political system. The monastic state, likewise, which is so highly injurious to industry in southern Europe, by enlisting under its banners such numerous hosts of idlers, has been rendered so harmless and even benign by the wise limitations of the great emperor and his illustrious successor, that we cannot reckon its existence among the obstacles to social activity. Instead of these two disadvantages, which in Russia are proportionately of smaller influence than in most countries of Europe, the employment of the nation here suffers under the pressure of two adverse circumstances which bear particularly hard on agriculture and greatly lessen the product of that industry. We have here chiefly in view the practice of keeping such a great number of domestic servants by almost every land-owner both in town and country. The number of boors that are thus
drawn

drawn off from the most useful of all occupations, and employed in unprofitable household services exceeds every idea that can be formed of it in other countries, as here the state of vassalage favours this species of oriental luxury as well as lessens in general the value of men and their labour. In a country where every one is obliged to hire persons for his service, this kind of luxury can never rise to so high a pitch as here, where the lord of an estate, by converting his boor into a lacquey, makes a grand figure at the slight expence of a trifling tribute in money or some inconsiderable feudal service, and where the maintenance of him seldom exceeds the scanty gratification of the primary wants of life. It may be affirmed, without exaggeration, that in the house of a russian nobleman five or six times as many domestics are kept as in families of equal rank in any other country in Europe, and the retainers of both sexes in some of the great houses in Petersburg amount to a hundred-and-fifty or two hundred persons; and that of Leof Alexandrovitch Narishkin might be mentioned as an instance. All the out-houses and offices of persons of quality swarm with what are called dvortzoviye leudi, whose numerous posterity seldom or never go back to the plough; but, grown up in idleness, increase and multiply for the same destination. In the country these noxious canker-worms of the state are indeed of some use to their owners by the

mechanical arts which the master has occasionally caused them to be taught, and by whom the want of town artisans and manufacturers is intended to be supplied; but in the larger towns this is very seldom the case, and even at the houses of the quality there is always besides a great multitude of loitering sluggards in the strictest sense of the term. If it were possible to make out an accurate list of all the unnecessary domestics and retainers at the houses of the nobles in the whole circuit of the empire, we should stand amazed at the loss sustained by the productive industry of the country through this wanton prodigality, the consequences whereof to the country and even to individual proprietors are of the utmost importance and deserve to be earnestly considered by every enlightened and unbiassed patriot.

Another abuse by which agriculture is deprived of a multitude of laborious hands, is the frequent migration of country-people to towns where they find an easier and more commodious means of gaining their bread. Not only on all the estates belonging to the crown, but likewise on most of them that are the property of noblemen, the boor pays his imposts not in natural products, but in money. This annual pecuniary tribute, which is called obrok, as we have shewn before, is levied on every male head, and is rated to the boors of the crown generally at three, but to the boors of the nobility on an average at about five rubles; in

in the worse districts not unfrequently less, in good often much more. In the country it is sometimes very difficult for the boor to raise this sum by husbandry and from the sale of the surplus of his products; whereas in the towns he is certain of earning that and even more in a secure and easy manner. The landlords are, therefore, not displeased when their boors have an inclination and an opportunity for so doing; they grant them without difficulty passports or permits to leave their homes and seek a livelihood in the towns. Here the boor in a short time becomes any thing, in which he can find employment: pedlar, footman, mechanic, artist, merchant; he always takes care to have good profit, and not unfrequently by industry and frugality, or by lucky adventures he soon is a substantial man. In the same proportion as his income rises, the revenues of his owner usually increase; and the very boor, who in the country could only by severe exertions pay his small obrok, pays in town five or ten times more, and sometimes lays up considerable sums beside. True, the countryman seldom entirely forsakes his home; but during his long absence the population suffers as well as the culture of his fields; the acquired property with which he returns is an additional incentive to his remaining acquaintance to seek in the same way an easier subsistence, and the aged boor, perhaps also grown infirm and disaccustomed to agriculture, becomes, in the generality

rality of instances, an useless consumer. — This practice, which, after all, is agreeable to the constitution of the country, and as long as the feudal system subsists is in some degree necessary, in order to supply the want of free people in the towns, is not upon the whole deserving of censure; but the abuse it begets has in general very pernicious effects on the cultivation of the country. Of the boors who migrate to the towns, many of them are indeed as useful in another way; yet a very great part of them here waste their time and abilities in utterly unprofitable employments. Large, strong, and healthy people, who were habituated to the heaviest labours of the field, are seen by hundreds in the residence and the government towns, hawking about eatables, figures of saints and other articles for sale, which might as well be done by boys at a cheap rate, or employed in the culture of culinary vegetables, which would be a fitter business for women, while the most excellent lands in the heart of the empire are lying fallow or only laboured by children. — Generally speaking, there is no civilized country in the world where there is such a waste of the time and the abilities of mankind; and it would not be difficult to prove, that Russia, with the whole mass of its human powers, partly not at all and partly unprofitably employed, might convert one of the most desert regions of the empire into the most flourishing province. This great disadvantage was

above five and twenty years ago a subject of deep concern to the late empress, as she declared from the throne; and we cannot give a better sanction to these short remarks, than by concluding them with the very words of her Instruction*.

“ Russia has not only an insufficient number
 “ of inhabitants, but comprehends large tracts
 “ of country, which are neither cultivated nor
 “ inhabited. — In what a flourishing state would
 “ this empire be, if by wise institutions we could
 “ obviate or prevent so destructive an evil! —
 “ It seems that, together with other causes, the
 “ method lately introduced, in which the nobles
 “ receive their imposts from the boors is detri-
 “ mental to the increase of the people, and to the
 “ culture of the earth. Almost all the villages
 “ pay their lords certain imposts in money. The
 “ proprietors, who seldom or never visit their vil-
 “ lages, rate each person at one, two, to five
 “ rubles, without concerning themselves how their
 “ boors are to get together this money. — It
 “ would of all things be extremely necessary to
 “ prescribe laws to the nobility, enjoining them
 “ in determining the imposts to be paid them to
 “ act with more consideration, and to demand
 “ such imposts from the boor as shall be least
 “ likely to remove him from his house and from
 “ his family. By this means agriculture would

* Cap. xii. sect. 265—271.

“ become

“ become general, and the people in the em-
“ pire would increase. But at present a coun-
“ tryman remains perhaps fifteen years absent
“ from his house, goes to distant towns and places
“ to seek his bread, and pays his imposts every
“ year.”

To the general obstacles to rural œconomy in the russian empire must be added the lazy vagabond way of life of most of the nations inhabiting the southern part of it, and particularly the larger half of Siberia susceptible of culture. It is naturally to be understood that we are not here speaking of those particular races, whose inclement abodes seem rather to have been formed by Nature for the resort of savage beasts than for the habitation of mankind; but even in the most favoured regions there are tribes to whom the arts of agriculture are as yet entirely unknown, and who derive their sustenance solely from the woods and waters, or from the rearing of cattle. Necessary as the procuring of these objects is, it is no less prejudicial that the industry of a numerous population should be confined to the mere acceptance of the spontaneous gifts of Nature. A people maintaining itself by the chase, the fishery, or the breeding of cattle, requires not only a much larger surface of country for its support, but it must choose out the place of its abode according to the advantages which it offers them for these occupations, and it is not unfrequently obliged to
remove

remove to another. Besides the disadvantages that hence arise to agriculture, the population is likewise in a very conspicuous manner impeded. — In fact, the government has been as intent on converting the nomadic tribes to agriculture as to christianity, or rather the former is not unfrequently a consequence of the latter; accordingly these endeavours have happily succeeded with several nations and stems: others again obstinately persist in bidding defiance to all attempts that can be made to wean them from their extremely injurious sloth. As such a transformation is not to be effected by violent means, and the several measures that were adopted in the mild spirit of the late reign having apparently proved ineffectual, it becomes a question highly deserving of investigation: what is the proper method of leading these tribes to more useful occupations, and how they may gradually be habituated to a more toilsome and permanent activity? Perhaps the surest way would be to elevate their present employments by imperceptible degrees, and in endeavouring to introduce other branches of them with which these people are hitherto unacquainted. It would, for instance, be infinitely more easy to encourage the pastoral people to a more careful attention to the breeding of sheep, and to shear them for their wool, instead of forcing on them in the room of this badly managed mode of gaining their subsistence, some other in direct opposition.

sition to their present manner of life. By selecting and gathering the wild-growing plants that are useful for manufactures and trade, the nomadic people might likewise be very serviceable, without being under the necessity of abandoning their main occupation. As the impulse to activity can only be roused by the sensation of wants, the increase of these is the first thing that should be aimed at, and it would therefore be a wise political measure to assist the trading intercourse of the nomades with more polished tribes, in order to bring them more acquainted with the accommodations of an improved way of life, and to introduce among them a sort of luxury which might stimulate them to greater industry.

It is plain from the foregoing facts that the russian empire loses a very considerable portion of its inhabitants partly by idleness, partly in useless employments, whose abilities might be applied to the advantage of culture; but even if all the people it has — after deducting the numbers requisite for the service of the state, and for other appointments of equal weight — were to devote themselves to agriculture, the whole of them together would not still be sufficient to cultivate in the most beneficial manner the superficies completely capable of culture of this prodigious empire. Under these circumstances, what rarely is the case, colonizings are really advantageous, and they may be conducted with very great success, if the means are not

not wanting which a sound political economy prescribes to that end. The reign of Catharine the second was in this respect of eminent consequence to Russia. Many thousands of foreigners during that period came and settled as well in the northern as the southern provinces, and the population, the industry, and the production of the russian empire have received a signal increase since that memorable æra. The defects which must naturally have accompanied the first attempts of that nature, will be from experience more easily avoidable in future, if, as perhaps it may be expected, the government should not henceforward lose sight of this important object*.

The second principal means for bringing agriculture into a flourishing state, is a sedulous and enlightened direction of this industry. On the supposition that the whole mass of people in a country that are able to work, and are not employed in other equally useful occupations, were addicted to agriculture, it would not thence follow that agriculture there was carried on in great perfection. The result of this employment depends

* The oeconomical society at St. Petersburg have unfolded the principles upon which people ought to proceed in laying out new villages or colonies in uncultivated districts, in a sound and well-digested treatise highly deserving to be read by all who are likely to have any concern in the matters to which it relates. See Aufwahl. ækon. abhandl. tom. iii. p. 27.

so much on the procedure of the countryman, on his supplies, on the construction of his implements, on the choice of his culture, and on a hundred other circumstances, that it would not be surprising if the consequences of similar exertions should turn out very differently. A soil tilled by poor, unpractised, negligent boors, furnished with bad utensils, can proportionately yield only a far inferior crop to that of another of equal extent, quality, and population, inhabited by substantial, industrious, and careful people. Nothing therefore is of greater consequence than a rational direction and regulation of this most useful of all professions, for eradicating prevailing prejudices, for the encouragement of application and industry, and for promoting the dissemination of agricultural knowledge. Nowhere is this guidance and inspection more needful than in a country where the system of vassalage, at least in many cases, cripples the spirit of industry, where of course the countryman feels but little incitement to refine upon the means of perfecting his business, and where, even if he should discover an inclination to it, it would be difficult for him to procure the necessary knowledge and helps. Ere we proceed to a more accurate detail of these impediments, it will be necessary to give a general delineation of the manner in which the estates of land in Russia are tenanted and managed.

The

The value of an estate is estimated partly by the situation and quality of the lands, and principally by the number of male boors belonging to it. At the sale or mortgage of a piece of ground, the latter forms the basis whereupon the price of the estate is calculated, in proportion to which the other natural advantages are taken into the account *, and even the magnitude of an estate is in common

* This practice differs so much from the usages of other countries, that what has been said above, without some farther explanation, would with difficulty be understood. The price of a SINGLE man is naturally very different, according to his greater or smaller utility, his physical properties, his acquired abilities, and even according to the place where he is to be sold. Thus, a young fellow is bought dearer than an old man: a girl that knows how to handle her needle and to do the work of a house, or a footman who can dress hair, will often cost twice or three times as much, &c. The only equality in this matter is the pecuniary compensation which the crown has fixed for each recruit to be raised; and this since the year 1786 amounts through the whole empire to 360 rubles. In many districts the boors have to pay as far as 700 rubles for an able-bodied recruit; whereas a single fellow is not unfrequently sold for 100 to 120 rubles, and girls at 25 to 50 rubles. — But, on the other hand, with whole estates, where the BOORS ARE SOLD WITH THE LAND, and where old and young, grey-beards and children, healthy, and infirm, in short, all the people of the male sex, are included, the price of them upon an average is somewhat more determinate; though here too, much depends on the nature of the soil, the situation of the estate, and other circumstances. The national lombard, in all mortgages which it accepts, takes the boor at 40 rubles; but in the sale of an estate they are seldom or never estimated at so low a price.

common occurrences never otherwise determined than by the number of the *souls*, by which term only the boors of the male sex are understood. By these likewise the income arising from the estate is generally settled. Some proprietors distribute all the reserved land among their boors, taking from them only the obrok; others retain, besides the obrok, a part of the lands to their own use, which the boors are obliged to till by feudal service; others again take no obrok, but deliver to the boors only so much land as is necessary for their support, and cause all the rest to be laboured for their own immediate benefit. Though the disposition of the estates is reducible to these three main kinds, yet in real practice a great difference obtains, as the fixing of the obrok, the feudal service, the proportion of the manor-grounds and peasantry-lands, &c. depends occasionally on the will of the proprietor, who in this matter is limited by no law. A great part of the nobility never live on their estates, and consequently never addict themselves to farming. Where merely an obrok is to be collected, the personal presence of the owner is unnecessary, as every village pays its tribute yearly to its *stahrost* or alderman, who

In the government of St. Petersburg every soul is paid for, according to the quality of the estate, from two to three hundred rubles; in other parts of the empire the price is commonly much lower, but at present hardly anywhere under a hundred rubles.

transmits

transmits it to the feudal lord; in the two other cases, the estates, in the absence of their proprietor are managed by what are called disponents, or even only by prikaschtschiki or clerks, with full powers, which latter are chosen from the vassal servants, in whom some confidence may be reposed*.

Having

* This general description, however, principally suits the great-russian provinces, and on the whole so many variations are seen in it, that we must run out into a very prolix detail if we would treat this subject to its full extent. In several governments, e. gr. in Livonia, Esthonia, Courland, the obrok is not at all in use, but every farm is managed by serfs; in the Ukraine, in Finland, in Ekatarinossaf, Vosnesensk, &c. the boors are partly glebæ adscripti, and partly quite free people who hire their land of the proprietor, paying for it either money and products, or undertake feudal service. The odnodvortzi or petty freeholders, the number of whom in Russia proper is extremely great, either perform their agriculture themselves, or have it done by hired people; besides, there is a multitude of free boors, subject to no vassalage, as, the Tartars, the foreign colonists, &c. among whom neither feudal services nor any other personal duties are in practice. — On the large estates, for example of count Razumofsky in the Ukraine, all the boors have their own parcels of land, which they use at pleasure, but are not allowed to sell. They are at liberty even to remove from the manor, but in that case their lands and tenements fall to the lord. The lord has his particular lands, consisting of arable, meadow, and forest, and lie dispersed in one part and another of the domains. Part of these are laid out in farms, as conveniency may suit with distilleries and brew-houses, in one place agriculture is pursued, in another is the stud of horses, in others again cattle

Having premised thus much, we may now form some judgment of the impediments which the feudal system opposes to agriculture and its farther progress. In the first case, that is, when the boors are only put upon the obrok, and have the free occupancy of all the tracts of country, as they have on all the estates of the crown, and on most of those belonging to the nobles, the pressure of vassalage is in fact but very slight, if the tribute only be proportionately fixed. It being perfectly indifferent to the owner of the estate, in what manner and by what means the boor procures his livelihood, so he do but regularly pay his obrok, it follows that the latter, under this adjustment is in some sort his own master, as being free to dispose of his activity, as well as of the share of the soil committed to him. Under such allowances, especially with a people so alert, so speculating, and self-interested as the Russians, industry already receives, without any encouragement, a powerful impetus; and it would perhaps

are kept, and some are pasturages for sheep, For all these several businesses the boors must find labourers, or do it as feudal service themselves; each person commonly working two entire days every week for the lord of the manor. Guldenstadt's travels, tom. ii. p. 382. On many estates the boors work three or even four days in every week for the lord. — As the civil relation in which the several classes of people stand to each other has been represented in a former part of this work, to dilate any farther on that matter here would be needless.

be

be very desirable, that this method of farming should be rendered general throughout, if it were not attended with the above-mentioned disadvantage, that the boors neglect husbandry to seek an easier profit by other professions. The blame of this, however, lies principally with the covetousness of the proprietor in pursuing his momentary private interest to the lasting injury of the whole, and therefore is too ready to grant a pass to the boor, because by this means he perceives the possibility of raising his obrok. At the same time it is not to be denied, that the russian boor himself is ever ready to exchange his plough for another business whenever he has an opportunity to take it up. It is therefore thought, and probably not without reason, that agriculture has sustained a considerable injury by the seizure of the estates of the clergy, as the monasteries caused it to be conducted chiefly by feudal services, whereas the boors, since they belong to the crown, pay only their obrok, which they collect by other means of profit.

Estates naturally bring in the greatest revenue, when they are neither let out, nor placed upon the obrok, but when the owner himself exercises farming upon them. As the proprietor of an estate can take every advantage and impose on his boors what feudal services he pleases, it is probable, that culture on the whole is the greatest gainer by this method of farming; but it is no less

probable, that the boors are thus less spared, than if they were rated at a certain pecuniary tribute or put under a contractor, to whom limits are usually prescribed in regard to feudal service. Far be it from us to wish to aggravate the lot of a class of people already oppressed, by tyrannical proposals, or to build the prosperity of agriculture on the ruin of the peasantry; but, in considering objects of such importance in a general point of view, we are not to be startled at mere epithets. Having delineated the advantages and disadvantages of the obrok, we will now, with the same impartiality, examine into the benefits and detriment of the feudal service, particularly in reference to the constitution of the russian empire.

By feudal services it is well known are meant the several kinds of labour which the rustics are obliged to perform to their landlord, or to the seignorial proprietor of the manor, either entirely for nothing or for a very disproportionate recompense. In a country where not only the earth and soil, but also the boor himself belongs to the freeholder, the determination of these services depends on the will of the latter. As the owners do not always perceive or rather but rarely perceive their true interest so clearly as to proceed in this matter with due discretion, it is not to be expected but either the magnitude or the kind of these services should in most cases fall heavy on the countryman, because the feudal service always takes precedence of the private

private industry of the boor, and consequently hinders him and puts him back in his own employments. In short, it is easily imagined that the feudal services, as compulsory tasks, are never performed with the same industry, the same exertion, and the same nicety with which the boor would freely work for his own immediate benefit. These general disadvantages which arise entirely from abuses, and can only be termed general under that supposition, are however in many cases overbalanced by the utility produced by the feudal service under certain limitations. In the first place it is clear, that in this manner far more land is cultivated, and consequently the production is far greater; again, the boor is under the necessity of employing his time and abilities in the most useful manner, in lieu of the money-dues which he otherwise must pay, and which he would provide for perhaps in a manner more convenient to him; and the feudal services are not unfrequently a school of agriculture for the country people, as by them they learn inventions and improvements in husbandry, which otherwise perhaps would never come to their knowledge. — In application to the present state of the russian empire those disadvantages are of less, and these advantages are of greater consequence. Here these feudal services are properly not performed for nought, as, when there is no obrok to be paid beside, they are in lieu of a rent for the lands held by the boor, and

when they are not fixed by the dictates of insatiable or tyrannical avarice, they are, for the foregoing reasons, far preferable to the money-tribute alone. As, moreover, the sale of the country-products is in several parts of Russia attended with difficulties which it is beyond the power of the boor to remove, he would either pursue agriculture merely as a means of subsistence, or neglect it altogether, were he not by the feudal service compelled to a greater production.

All this being calculated and weighed together, it appears, that no kind of farming, in the present state of things, and without building on idle expectations, could be better suited and more advantageous to the whole and to the individual, than a stated proportion of the obrok and the feudal services fixed and established by law. A moderate money-tribute stimulates the countryman to industry and traffic, that he may turn his products into cash, and begets in the proprietor a certain interest in the welfare of his boors, as the security of his receipts is dependent on their success, at the same time that it facilitates the prosecution of other collateral means of gain. Ascertained and reasonable feudal services prevent the neglect of agriculture, help to increase the production, and, as examples of improved culture, may uncommonly contribute to the advancement of husbandry. For favouring liberty and industry still more, it might be left to the option of the lord

to take payments in kind of his boors in lieu of feudal service, still on the supposition, however, that the proportion here likewise should be settled by law. Any plans for rendering this matter practicable will certainly not be expected here; they can only with propriety be framed after due trial, by honest and enlightened land-owners intimately acquainted with the local relations, as they can only be enforced, and the difficulties they will have to encounter can only be surmounted by the strenuous exertions of the legislative authority.

In the mean time, however near or remote the hope of so beneficial and important a reform may appear, it may not be in vain to remark the consequences which would thence ensue to the improvement of agriculture. The countryman, who would then have no arbitrary imposition of burdens to fear, would pay his dues and perform his feudal service, as equitably ascertained by law, with greater satisfaction; and, as he could employ the remainder of his time and abilities as his own free property, he would feel more inclination and spirit to a better application of them. Farther, as the generality of proprietors would be induced to cultivate a portion of their lands on their own account and to their own benefit, the produce of them would no longer be so indifferent a concern as it is at present to all those who are content with the bare receipt of the customary obrok. The nobles would naturally then be more sedulous than they

have

have hitherto been to acquire a knowledge of the farming business, the dissemination whereof would not only, by means of the feudal service, be more general among the country-people, but the nobility themselves would promote it, for the sake of becoming, by the greater prosperity of the boors, more sure of their pecuniary income. The means to this end would be facilitated in several ways, since it has been customary with the russian nobility to travel into foreign countries, and to learn foreign languages, and since the free œconomical society at St. Petersburg have with such an honourable zeal, and so disinterestedly and beneficially answered the purposes of their institution. The writings of this society, which have appeared during the last thirty years in the russian language, contain a good fund of practical maxims and projects, mostly adapted to local exigencies, for the improvement and extension of husbandry. In them may be seen directions how the methods of culture now in use may be multiplied and elevated, or new ones be introduced; they furnish means for preventing the failure of crops, for repairing the devastations of the maggots in corn, and for curing the diseases of cattle; they recommend a multitude of tried projects for improving the present defective and inadequate implements of husbandry, &c. Sooner or later, perhaps, their patriotic endeavours may attain their end; but certain it is that it would be more speedily and effectually

effectually done in the beforementioned circumstances.

We have touched upon some of the general defects and impediments which retard the progress of agriculture in Russia; we have even presumed to deliver an opinion how these defects might be remedied, and these hindrances removed or diminished. Though it be the common fault of projects, that they are always well intended but seldom practicable, ours at least must escape the censure of being founded only on an ideal basis. Convinced that the entire abolition of the state of vassalage would be at present accompanied with insurmountable difficulties, and that such a beneficial reform is not so likely to be effected by laws and imperative commands as by a change in the general way of thinking and by a greater degree of intellectual improvement, we have all along taken the present condition of the people as our leading principle, and only endeavoured to call the attention of those whom it may concern to this important truth: that the most infallible method for making agriculture flourish is by relieving the countryman and securing his existence by law against the arbitrary power of his manorial lord. What member of the community, what truly enlightened land-owner will deny or suspect the truth and general soundness of this maxim? Who would not wish to see it put into execution?

Indeed

Indeed farming in general did receive during the late reign so many and powerful encouragements that its progress in that period was very considerable. Numberless tracts of waste lands were occupied by colonists and husbandmen, or granted to individuals for rendering them useful; attempts were made to gain an access for agriculture among several nations or classes of people hitherto idle, and to attach the countryman to it by various means and institutions *. By the erection of new towns, by the establishment of public granaries, by making rivers navigable, by the encouragement of trade and manufactures, the barter and sale of the country-products have been facilitated to an uncommon degree.

The foundation of the œconomical society has been of great importance to husbandry in more than one respect; not only by disseminating through the papers of its members a variety of useful information, but also by proposing premiums it has excited the industry and application of the countryman. Freeholders of all ranks have taken upon them to try and to execute their projects, and a spirit of activity and diligence has by these exertions been diffused to the remotest re-

* Among the later ordinances promulgated concerning agriculture, two principally were of great consequence. By one of them a CORN-TAX was imposed in most of the governments, and the other ordered THE SALE OF ALL THE CROWN-LANDS THAT ARE UNOCCUPIED.

gions. Among the more wealthy proprietors there are persons who have qualified themselves for farming their own estates, and there are now seen in many parts of Russia established farms which might vie with the best in several other countries. To descend to particulars would occupy more room than we can spare from the several subjects we have yet to treat of; and indeed we may have already from the importance of this article, been tempted to dwell too long upon it, at least in the opinion of some of our readers, with whom it may not excite an equal interest; but several of the facts here mentioned will be seen confirmed as we proceed.

SECTION V.

Horticulture.

THE remaining branches of productive industry can properly be considered as no more than collateral employments of agriculture; and, as the products arising from them form no part of foreign commerce, and consequently have no statistical importance, we may comprise the following sections of this book in so much the narrower compass. None of these employments is so nearly related to the culture of fields as the CULTURE OF GARDENS, as the two species of industry not unfrequently have for their object the raising of the
same

same products : the latter, however, differs in this, that it is chiefly employed for mere consumption, and demands a more confined but more careful culture. The scene of this activity we must principally lay in middle and southern Russia. If, as we have heretofore seen, a great part of the Russian empire be unfit for producing the commonest fruits of the earth, it may be expected that a still greater part by far of its surface is lost to gardening ; and if there be tribes who uniformly reject the simple and lucrative business of agriculture, it is natural that there should likewise be those to whom the more artificial and less profitable culture of gardens is utterly unknown. On the whole it may be even said of this industry, that it corresponds but very imperfectly with the riches and liberality of nature ; and though the majority of its objects are here and there even wild and in plenty, yet human industry has done but little either to diffuse or to improve it.

We may spare ourselves the needless trouble of specifying by name all the CULINARY VEGETABLES that are cultivated in Russia ; it will be better to confine ourselves to the mention of some species, which are worthy of our notice as articles of food. Of this sort are, for example, the cabbage, the consumption whereof in all possible forms, but chiefly as four-kraut, is immense ; and for the greatest part of the year supplies a daily dish to the lower classes. In no less general use are

HORTICULTURE.

are onions, garlic, and cucumbers, which are frequently eaten raw by the common people, with whom they almost everywhere supply the place of a sallad. With the country-folks of Finland turnips are not unfrequently a substitute for bread, but in proper Russia they are not very commonly eaten. — Most kinds of pulse grow there, but the cultivation of them is not in all parts alike. Turkish beans, as they are called here, and by us french-beans, are frequently found in the gardens of the southern districts, but in the northern provinces of Siberia they seldom ripen. Beans and peas are generally very common; lentils, on the contrary, are rarely cultivated, and in Siberia not at all. — Carrots, parsnips, chicory, truffles, and other roots are spontaneously produced by nature in the regions to the south; in the middle and northern they are pretty frequently raised in gardens. — These latter also contain a great variety of edible mushrooms, which at least should be mentioned, because they are not easily gathered and eaten elsewhere in such numbers.

These then are nearly all the objects cultivated by the countrymen in kitchen-gardens. The culture of the finer vegetables is only carried on in the neighbourhood of large towns, but there with such success that the russian gardeners are universally allowed to possess a peculiar talent that way, and it is seen by numberless examples, that the Russians only want a few directions and more encouragement

agement for excelling in every kind of culture. In spite of the difficulties attending horticulture about St. Petersburg, from the rudeness of the climate, yet the choicest culinary vegetables are raised so early, in such perfection and in so great abundance, that they are to be had at every season of the year, and generally cheaper than in many parts of northern Germany. As an instance of this industry we will only mention asparagus, which in the government of Mosco and some others is so much cultivated, that they are sent round the country far and wide as an article of trade. The same may be said of artichokes and other tender vegetables, which in several places the countrymen not only understand how to cultivate, but also to keep for every season. — On the whole, however, kitchen-gardening, particularly in the interior provinces, is but very miserably managed, though in many districts it might be made a profitable branch of business, especially for the female sex. Habituated to a simple manner of living, and attached to his national customs, the common man contents himself with cabbage, onions, and cucumbers; and, as the Russian customary meals render no great change of vegetables necessary, we therefore see, even at the tables of the higher classes, those of the great cities excepted, seldom any other than the ordinary kinds of them.

So

So much the richer is Russia in FRUIT-BEARING SHRUBS and wild berries of every species; the latter are therefore gathered in incredible quantities, and eaten either raw or preserved with honey and sugar. It would not be easy to point out a country where this confectionary is more current than here. Among the countless multitudes of wild and planted berries, the cranberry * at least deserves to be particularized, as supplying the want of lemons in the northern districts by its salutary acid juice, and is even not unfrequently used in St. Petersburg for similar purposes. The other excellent berries, likewise, are chiefly peculiar to the north of Russia as well as to all Siberia; the large garden-strawberry or hautbois are even found wild in the territory of Irkutsk. On the altayan mountains the red currant grows to the size of an ordinary cherry, and ripens in large bunches which are of an excellent flavour. The consumption of all these little wild growing fruits is exceedingly great. Besides the prodigious quantities which are generally eaten raw or preserved in sugar and honey, they are used in preparing several cooling and spirituous liquors †. — The hazel-bush is found over all Russia, as far as the Kama; but not in Siberia; it is particularly plenty in the region between Simbirsk and Kazan, where it gives

* *Vaccinium oxycoccos*. In russ, klukva and shuravika.

† Herrmann's statist. schilder. p. 227.

rise to a branch of trade not inconsiderable, as a great part of Russia and all Siberia are hence supplied with a sweetmeat in very general use, eaten in the fasts with nut-oil. As in all the towns and villages wherever we go, we see the common people eating nuts by way of pastime, we may thence form a conclusion of the vast consumption of them. A few years ago in the aforesaid part of the country a weight of four pood at the first hand was worth about a ruble, and no farther off than the next towns, the price was already one and a half or two rubles *. — The well-flavoured cedar-nuts are found about the Ural in great plenty.

A culture entirely peculiar to the southern provinces of Russia is that of the SUGAR-MELONS and WATER-MELONS, or arboufes, which only thrive in the open air to the 52d degree of latitude. In most parts of this region, particularly towards the Volga, the Don, and the Ural, these fruits are raised in surprising quantities, as the culture requires but little trouble. The melon-gardens, which from their size might rather be called fields, are usually surrounded with nothing more than a slight fence, just sufficient to keep off the cattle, and divided into long beds, between which, in the oriental fashion, little channels are raised or cut in the clay, for properly watering the plants. For this reason these gardens are always

* Georgi's travels, tom. ii. p. 798.

laid out contiguous to a standing or running water, which sometimes is brought into the channels by an engine worked by a horse. The melons require a more careful culture, especially the superior sorts, as cantaloupes and the like; whereas the arboules more easily come forward, and with little pains they are brought to an extraordinary bulk. In the government of Ekatarinossaf they are treated with scarcely more care than the most vulgar field-fruits; and yet on every field there are arboules weighing thirty pounds, that in point of succulence and mild flavour cannot be excelled*.

The common ORCHARD-FRUITs succeed everywhere in the middle and southern part of Russia; and on the Volga and the Oka, in Little Russia, Caucasus, Taurida, &c. really large orchards are seen: nevertheless these districts do not by far produce fruit sufficient for supplying the whole empire, and particularly north Russia and Siberia. As there seems to be but little disposition to multiply and improve the present kinds of fruit, or to dry and preserve what they have, it need not excite our surprise, that Russia, notwithstanding the productiveness of its southern provinces, should import a very considerable quantity of foreign fruits. In the year 1794 only at St. Petersburg

* Pallas, travels, tom. i. p. 391. Preisschriften und abhandl. der ökon. gesellschaft. tom. i. p. 200.

were brought in to upwards the value of 636,000 rubles, among which however were several kinds which either could not be raised at all in Russia or only in insufficient quantities.

Wild apples and pears grow as far as the 49th, but wild plumbs and cherries to the 55th degree of north latitude. In the less favoured regions, where these fruits do not come forward in the open air, art is sometimes, in an admirable manner, employed to the assistance of nature : but this industry, the child of opulence and luxury, is only exerted in the vicinity of great towns, or at some few country-seats, and then mostly by foreigners. Of all the species of fruit produced by the Russian empire, APPLES and PEARS are the most abundant, and it is almost of them alone that there are several improved sorts, and the culture whereof is pursued in the gross. All the villages on the Volga and the Oka have their orchards, or more properly apple-gardens, and numbers of boors live here without husbandry, merely by horticulture, in good circumstances. In prosperous years it is not uncommon for a countryman to take from three to four hundred rubles of a chapman who agrees for the fruit on the trees, and gathers them himself; and many villages get sometimes above ten thousand rubles for the fruit they have raised themselves. All the kinds of apple growing here are originally from Astrakhan, Persia, and the Kabardey; the european

pear sorts, reinets, pippins, codlins, &c. are seen here nowhere. The most remarkable of those that thrive in these parts is the kirefskoi apple, which often grows so large as to weigh four pounds, having an agreeable acidulous flavour, and keeping a long time*. — In other districts also the apple is cultivated with great success, as, for example, about Mosco and some of the adjacent governments, where they produce particularly a transparent sort, brought originally from China, full of juice, and extremely well-tasted, called nalivui, full-melting, as, in fact, it is so full of juice as to be ready to burst. Their flavour is a pleasant acid; and, on holding them up to the light, the core is distinctly seen, and the pips may be counted. In several of the governments great returns are made with orchard fruits, and the apples in particular form no trifling branch of inland traffic: in the government-towns, Kaluga and Simbirsk, for instance, these returns amount one year with another to eighteen or twenty thousand rubles*. At the same time, plentifully as these kinds of fruit are produced, yet they are not by any means adequate to the demands of the whole empire, and particularly Siberia. The european governments lying to the north, therefore, receive

* Georgi's travels, tom. ii. p. 836.

* Statist. ueberf. der statth. des russ. reichs, xvi. xxv. xxxi.

by the ports on the Baltic considerable cargoes of foreign apples and pears, partly fresh and partly dried; whereof at St. Petersburg alone in the year 1794 were imported to the amount of more than 122,000 rubles. Besides the propagation and improvement of the present kinds, which are capable of being far more diversified, it would therefore be necessary to render more common the practice of drying these fruits and the making of pastry.

CHERRIES, especially of the Spanish sort, are not only very frequently produced in orchards, but in southern Russia are even whole forests of cherry-trees. In some districts the culture of this fruit is carried to such an extent, that it constitutes the main branch of subsistence to the inhabitants, as in several circles of the government of Vladimir; and yet so little is it here thought of improving it, that there are nowhere any more than two kinds, and they not much bigger than the ordinary carroons*. The steppe-cherries, which grow wild in the governments of Ufa and Caucasus, are chiefly used in making cherry-wine, which is distributed throughout the country, and also yield an excellent aromatic vinegar. In the confines of the Terek grow cornel-cherries, which, preserved unripe in vinegar, are equal in flavour with the veronese olives†.— PLUMBS are very plen-

* Pallas, travels, tom. i. p. 19—153.

† Falk's beytrag, tom. ii. p. 117.

tiful in several parts, particularly in Little-Russia, on the Terek, in Taurida, and about Mosco. In the government of Volsnesensk they are frequently dried in ovens and transported in that manner. — The importation of dried plumbs and cherries amounted in the aforesaid year at St. Petersburg to upwards of 38,000 rubles; an expence which might easily be saved, if the countrymen would accustom themselves to the preparation of baking-fruit.

Neither is Russia entirely destitute of the superior kinds of tree-fruit, though the limited circuit in which they flourish in open air cannot furnish enough of them for the demands of the whole empire. APRICOTS and PEACHES succeed in most parts of Taurida and Caucasus, and in the southern circles of Kief, Ekatarinoslaf, Volsnesensk, and some other governments without much tending; but in the middle regions they require green-houses, in which, however, even in St. Petersburg they are raised in the greatest perfection. The cherries of Kitzliar, Astrakhan, and Taurida are excellent; but in all other places they are small, and seldom come to full maturity; whereas the apricot-trees are not so sensible, and thrive very well even in some parts of Little-Russia. — The QUINCE-TREE grows wild and plentifully in the forests about the Terek; they would probably succeed too in other southern provinces. — CHESTNUT-TREES are only found singly in Taurida,

Kief, and Voronetch : as they succeed in the latter governments, there is no doubt that they might also be raised in all the southern. — WALNUT-TREES are seen in most districts of southern Russia, and generally in great abundance ; but the ALMOND-TREE grows only in the provinces that lie most to the south. Probably the culture of it might be tried with some success even more northwards, at least it is here in some degree compensated for by a shrub, called by the botanists *amygdalus nana*, and is found in abundance in the open fields of middle Russia and the south of Siberia. This shrub would thrive in more northern districts, as it succeeds very well, even in St. Petersburg. Its fruit yields in no respect to the bitter almonds, and they can even be deprived of this bitterness by steeping them for a few days in brandy, whereby the almonds become sweet and the brandy gets the agreeable taste of *perfico*. — FIGS and POMEGRANATE-TREES are seen singly near Kitzliar and in Taurida ; but LEMON and ORANGE-TREES are everywhere raised only in hot-houses, though Pallas assures us that they would very well bear the winter in Taurida, with some attendance*. — Certain it is, that all these cultures might be generally propagated and even transplanted into more northern districts ; and if it be considered that Russia would thus be a gainer of above half a million annually, which at

* *Güldenstädt's akad. rede, &c. 90—95.*

present goes abroad for these articles that are now become necessary, no farther remark is requisite for rendering the importance of this kind of industry comprehensible.

SECTION VI.

Culture of the Vine.

THE same observation with which we concluded the foregoing section holds good to a still greater extent of the CULTURE OF THE VINE, to which the southern regions of the empire offer singular advantages, but which have hitherto been so exceedingly neglected, that Russia is obliged to obtain its whole supply of wine from foreign countries. From Guldenstædt's statement we learn that about thirty years ago Russia purchased wine to the amount of 445,000 rubles, brandy to that of 207,000, and wine-vinegar to the worth of 11,000 rubles; for dried fruits of the vine she paid 27,000 rubles for raisins, and 7000 rubles for currants. This importation, which has considerably increased since the year 1769*, might at least be diminished by one half if only the com-

* In the year 1794, at a time when by the prohibition of french wine this article of public expence was greatly lessened, the importation at St. Petersburg alone amounted to 734,000 rubles in wine, 7000 rubles in brandy, in vinegar 43,000, in raisins 60,000, and in currants 15,000 rubles. The smaller consumption of the foreign brandy is therefore much

moner sort of table-wine, the consumption of which is the greatest, were produced in the country, whereby at once both the industry and the population of the southern provinces would acquire a very important source of encouragement. — The parts in which the culture of the vine is at present carried on are the governments of Caucasus, Taurida, Ekatarinofslaf, and Vosnesensk, and the country of the Don-kozaks; in the majorussian governments, and some other provinces of the southern regions, the vine-stock, indeed, here and there succeeds, but the produce of it is generally so small as not to merit particular notice.

In the government of CAUCASUS, and particularly the territory about Astrakhan and on the Terek are districts where the vine is cultivated with some success on the large scale. The culture of the vine at Astrakhan took its rise in the last century, when an Austrian monk became the Triptolemus of that country*. This man, who

much overbalanced by the larger demand for the other articles. In the year 1768 the whole amounts of the products of the vine imported were 697,000 rubles; in the year 1794 at the port of St. Petersburg alone were entered to the value of 859,000 rubles of them.

* Olearius, travels into Persia. Weber's verändertes Russland, tom. i. p. 156. Gmelin's travels, tom. ii. p. 115. Beschreibung und geschichte des weinbaus in den südlichen gegenden Russlands, von Rading, oekonomie direktor in Astrakhan; in der auswahl ökon. abhandl. tom. iii. p. 291.

was

was brought to Astrakhan as a prisoner, and here adopted the greek religion, planted in the vicinity of his monastery persian vine-stems, which succeeded so well, that in the year 1613 he received orders from tzar Mikhaïla Feodorovitch to lay out a regular vineyard in that city. Several of the inhabitants soon followed his example, and in 1640 they took into their service a german vine-dresser named Bothmann. Peter the great, to whom no object of general utility was indifferent, caused several sorts of vine-stocks of the most celebrated european vines, and a vine-dresser belonging to each of them to be written for, who was to treat and to tend the vine-stocks according to the practice in his own country. Almost all of them thrived, and in a short time Astrakhan was in possession of a variety of fine grapes, of which at present are reckoned no fewer than twenty different sorts. Nothing is more to be lamented, than that these vine-dressers were not so expert as wine-coopers, and had not the art of making good wine. The vineyards were now in the best condition possible, but the wine turned out badly, and from all the various kinds of grapes only one species of wine was produced, namely, what is called the tschichir, which, on account of its tart and unpleasant taste, is still, notwithstanding the improvements it afterwards had, in very bad reputation. The culture of the vine now by insensible degrees declined so much, that

that even the vineyards belonging to the crown were suffered to go almost entirely to ruin, till under the reign of the empress Elizabeth, a Ser-
vian, of the name of Parobitch, was appointed director of them. This ingenious and active person not only restored the imperial vineyards, but raised the culture of the vine in general into such repute, that it began to be an important and gainful business. The wine was now indeed drinkable; but the want of good wine-coopers still continuing, it did not attain to its due perfection; and the honest Parobitch dying after having faithfully and usefully discharged his office for fifteen years, the crown vineyards fell again into a state of decay. On the erection of the municipalities in the year 1786 these vineyards were relinquished by grant to the corporation, on condition that the imperial court, as heretofore, should be supplied with fruit from them; and the boors belonging to the vineyards obtained permission to inscribe themselves as citizens or to choose some other station, and follow any other trade. As all the work must now be done by hired people, and the town finding it occasioned more loss than profit, leave was granted them on their petition to sell all the crown-vineyards; and the culture of the vine, which from its origin, for a space of a hundred and seventy-five years, had been chiefly a concern of the government, is
become

become since that period a mere object of private industry.

For all this however it is not the less prosecuted with considerable benefit, though not so much in the view of obtaining wine, as for raising good grapes, which are hence distributed over all Russia and even beyond. A pood of these grapes costing on the spot between two and three rubles, and this profit being much easier and surer than that on the making of wine, it is not to be wondered at that the owners of vine-yards consider the wine-press as a mere collateral concern, and only convert into wine such clusters as remain upon their hands unfold; that they may not be entirely lost. The small quantity of it made at Astrakhan finds a certain sale, as must or stum, among the common people; and to these several causes it is to be ascribed that good old wine is so seldom to be had here by wholesale. The culture of the vine-stock is therefore here rather a sort of gardening than the proper business of the vintager, and accordingly the principal concern is to raise thick-skinned grapes, which are fitter for transport, but by no means juicy enough for yielding much wine. For the same reason too they force the grapes by copious irrigations to a prejudicial magnitude*, and instead

* “ As in Astrakhan they have the bad habit of watering
“ the vineyards to an immoderate degree so as to make
“ almost bogs of the vine-beds, it is no wonder that the juice
from

instead of stripping off the leaves, as is generally done to expose them more to the sun, they are carefully shaded by the astrakhan vine-gardeners, that they should not get spots from the sun-beams. Both give the grapes a beautiful look, but it would be impossible to act more absurdly, if they wanted to get good wine.

On the Terek near Kitzliar, and on the Don in the territory of the Kozaks likewise a great many vines are reared; in the first-mentioned district they frequently even grow WILD. Though the soil is here far more adapted to the culture of the vine than about Astrakhan, the wine notwithstanding succeeds no better, because the careless and inexperienced inhabitants have no notion of improving it. The history of this culture is unknown; probably it might have its origin from the wild vines growing in several parts of the caucasian districts, as both the wild and the reared vine-stock alike bear purple clusters. Not only the

“ from these watery grapes turns out poor of viscous and
 “ saccharine parts, and can afford no good and spirituous
 “ fermentation. It seems to me that the bad quality of the
 “ astrakhan wine is more owing to the watering than to the
 “ saltiness of the soil, and then perhaps in some measure to the
 “ careless manner of pressing. — If it be intended to have
 “ regular vineyards, and to obtain in the country a good
 “ wine that will keep, that continual pouring of water on
 “ the roots of the vine-stocks must be avoided as a material
 “ injury.” Pallas, travels, tom. iii. p. 627.

soil,

soil, which is here little saline, but also the weather is more favourable to the culture of the vine than at Astrakhan, as showers of rain are more frequent, and consequently the expence there occasioned by the watering is avoided. Besides, the inhabitants of the parts about the Terek and the Don convert almost all their grapes into wine, of course the obtaining of it is a great object with them; it is therefore indeed to be lamented, that it should turn out still worse if possible than the common astrakhan wine. The example of several proprietors of these vineyards sufficiently proves, that even without art or direction, but with some care, a good potable wine may be got from the vines ordinarily growing there *.

The manner in which the culture of the vine is prosecuted both in Astrakhan and at Kitzliar †,

* An example of this nature highly worthy of imitation has been given by lieutenant-general von Beketof in Astrakhan. As soon as he had laid out his vineyard and put it in order, he wrote for a wine-cooper from Germany, and caused several pupils to be taught by this man. By the improved process now adopted, the wine was so much the better that the owner some time ago had from twelve to fifteen thousand casks of wine lying in his cellar, the oldest of which had been there seventeen years, and by several good judges in Mosco was taken to be mozelle or claret. — By the same method another land-owner on the Terek obtained from the common grapes there a well-flavoured wine. See Aufwahl œkon. abhandl. tom. iii. p. 295. 302.

† Rading, in der aufwahl œkon. abh. tom. iii. p. 300. Falk's beyträge, tom. ii. p. 136.

approaches,

approaches, as we observed before, to gardening. The vine-stocks are not reared on vine-mounts, but in gardens cut into trenches, with sloping banks on which the stems are planted in rows. In Kitzliar every stem is fastened to a stake, but in Astrakhan to lattices and espaliers. After the vintage they are lopped quite to the eyes, then in October bowed down to the ground and covered with hay and earth. In spring they are freed from their winter covering and fastened to their stakes or espaliers, where they are screened as much as possible from the sun-beams, and watered without intermission for accelerating their maturity. The weeds are carefully hoed from about them, and for guarding the ripe clusters from the injuries of rapacious birds, boys are hired to stand on high scaffolds, where they keep up an incessant shouting, and continually pelt them with stones.

The vintage lasts from the end of August to the end of September, yielding generally four sorts of grapes, namely large white and purple, small oval and small round purple grapes without stones. Most of the large grapes are packed up and sent in jars over the whole empire, for which purpose in September carriers come from all parts to Astrakhan. The Bukharians kindle a little straw under the clusters after hanging them up, smoking them as it were, by which the skin gets tougher and the fruit keeps better.

The grapes which cannot be sold fresh are squeezed; for which purpose they are collected
into

into canvas bags, then laid in troughs and trodden with the feet, after which they are brought under the wooden press. The juice squeezed out by treading, as it is drawn from the ripest clusters, yields the best wine. The must is poured into vessels of forty or fifty vedros, in which it falls into fermentation, and after three weeks it is marketable wine. The husks are thrown away in a very unthrifty manner. — The white wine is almost the colour of water, and the red is but slightly tinged with that hue. Both, when somewhat properly managed, are light sweet table-wines, but in less than two years lose all their pleasantness and even turn sour; they are then used for distilling brandy or making vinegar. The astrakhan grapes are inferior to those of Kitzliar by reason of the saline soil and the artificial irrigation; but the astrakhan wine, with careful management proves the better of the two, and accordingly bears a higher price. To preserve an uniformity in the price of wine, which is ascertained by the vintage, no one may sell his wine till that price is fixed. Formerly in Kitzliar a runlet (of 16 pound) of new wine sold for 28 to 35 kopecks; whereas the astrakhan on the spot cost a ruble and a half. At present the price is much raised; and the latter, particularly in Russia and Siberia, is sold not much cheaper than other foreign wines. — The wine which the Tavlintzes or mountain Tartars bring to Kitzliar, excels that of the Terek both in flavour and body, therefore

it keeps much better and is drunk by people of condition. The caucasian Tartars, though mohammedans, not only drink wine publicly, but make it still more intoxicating by hanging in it, while the fermentation is going on, the unripe heads of poppies.

The large purple grapes and the two smaller sorts are, on the Terek as well as at Astrakhan, converted into raisins; of the ripest and sweetest a syrup is prepared, which is of an agreeable taste and used for various purposes of housekeeping; and in the aforesaid districts frequently supplies the place of sugar.

In TAURIDA the vine-stock has been long domesticated and perhaps may be even a relic of grecian culture. There are several excellent sorts of it, and in the district of Feodosia and Afineï it yields a wine very pleasant to the palate, not much unlike to Champagne. Among the best known kinds of grape there are some that to the view may be compared with the best of those produced abroad, for instance, with the sapillier, the rising from the Rheingau, the muscadet, the chardenet from Champagne, the hungarian white lagler, the chasselas rouge, &c. All these species of vines, which grow in the southern half of the peninsula, (partly even wild,) would produce most excellent red and white wine, if more attention were paid to the culture of them, and particularly to the management of the must. At present the vine-stocks have

have but little nurture and care bestowed upon them; they are likewise seldom planted on terraces, and are generally left to nature*.

The vine is cultivated to a certain degree in the government of EKATARINOSLAF, and it comprises districts where this culture might be introduced with good hopes of success. It is chiefly pursued on the rivers Bogue, Ingul, Inguletz, and on the Dniepr, likewise here and there by the Kozaks. The grapes are not bad, but from the wretched management, which is carried so far that they even pour water to the must, the wine will not keep, and therefore cannot be transported. — Also in the government of VOSNESENSK the vine-stock succeeds admirably; but, as the people here understand nothing of the art of making wine, it is but little cultivated. In those circles which formerly constituted the steppe of Otchakof there are seven sorts of vines, and this culture has been here long in vogue; but it is usual only to dry the grapes, in which manner they yield a petty branch of trade†. — Besides these provinces, where the culture of the vine is in some measure carried on in the gross, there are particular districts in the bordering governments, where the vine-stock, with a very close attention, might thrive; and it is even actually found here and there in Little Russia and

* Description phys. de la Tauride, par Hablizl. Pallas, tableau de la Tauride.

† Statist. ueberzicht der statth. des russ. reichs, xl. 97.

on the Volga. Near Kief it is however only reared as an object of gardening: the vines bear both the white and the purple grape; but the latter seldom come to maturity, and even when they do ripen, they are still very sour*. The culture of the vine seems to succeed better on the Volga in the government of Saratof. Here Pallas found in the colony of Galka a german vine-dresser who had planted upwards of three thousand bearing vines, from which he gathered in one year twenty pood weight of clusters. This man never watered his vines at all, though they stood on pretty dry soil, and though his grapes were not equal to those of Astrakhan either in size, beauty, or taste, yet they afforded a much better must, which, when it was suffered to stand, became a ruby-red wine very like the french, and in comparison with that of Astrakhan, might pass for nectar*. It would be very interesting to learn whether the example of this german Noah has found any imitators among the colonists of those parts, or whether so promising a commencement has been attended with no farther effects.

From what has been said it is manifest that the russian empire is in reality not deficient in districts where the culture of the vine might be carried on with the greatest success, though from the present state of this culture it scarcely deserves that ap-

* Guldenstädt's travels, tom. ii. p. 346.

† Pallas, travels, tom. iii. p. 627.

pellation.

pellation. The neglect of so important a branch of industry, amidst so many advantages which Nature freely offers to that end, is so striking a breach in the national employment, as to merit a very serious contemplation. A few years since, a member of the œconomical society brought this matter forward, and offered a premium of a hundred ducats for the best answer to the question: How the culture of the vine-stock and of the olive-tree could be best encouraged in the russian empire? — Since that time, proposals and schemes have indeed been delivered in to that purpose, but as yet none of them have been brought to effect. The paper that obtained the prize and was published by the society *, contains, however, such sound and instructive arguments, and proposes methods so easily practicable and safe, that we shall give the reader a sensible gratification, and perhaps do the cause itself some service, by extracting the most material results of that paper, and thus doing what we can to bring it into greater circulation.

As in making plans for introducing and perfectionating the culture of the vine, it is not intended so much to raise many sorts of wine, as that the wine produced should be good, it is necessary to fix the limits beyond which no great success can reasonably be expected from that spe-

* Friebe, von der kultur des weinstocks in russischen provinzen. In der auswahl œkon. abhandl. tom. iii. p. 215.

cies of industry. We have indeed seen that the vine-stock thrives near Kief and in the territory of Saratof in the open air, though the first-mentioned place lies in $50^{\circ} 27'$ and the latter in $51^{\circ} 45'$ of north latitude; but from all the experiments that have been made, the culture of the vine would never succeed here in the gross, or would yield only a bad product, though Germany in the very same latitude produces the exquisite rhenish or hock, the mözelle wine and the stein-wine. This difference is owing to the loco-position of the countries and the direction of the mountains. The districts of the Rhine are protected to the north by a chain of mountains, and to the north-east by the forest of Spesshart; Franconia has the forests of Bohemia and Thuringia, whereby Bamberg and Wurtzberg particularly acquire a temperature nearly approaching to that of upper Italy, and even the county of Semlin in Hungary, where the tokay grows, is sheltered from every piercing wind by the carpathian hills. Whereas all the southern part of Russia has no ridge of mountains to defend it against the east, north, and north-west winds, which accounts for the inequality of the temperature in those districts and the rapid vicissitudes of heat and cold, which are injurious to all tender vegetables and plants, and especially to the vine. If therefore the culture of it be practicable in other countries lying to the north, by a good local situation, the Russians should strive to obtain

tain for their country the same advantage by a more southern latitude; and therefore it is by no means advisable to extend the proper culture of the vine beyond the EIGHT-AND-FORTIETH degree, though it would be equally useful to manage the vine-stock in the contiguous northern districts as high as the one-and-fiftieth, as an object of gardening, in order to gain grapes and other serviceable products for consumption.

The whole region of the russian empire from the southernmost borders to the 48th degree of latitude constitutes indeed a superficies of more than 12,000 square geographical miles; but of this large tract perhaps scarcely one fourth part is proper for the culture of the vine. The vine-stock requires not only a warm, mild, even tempered atmosphere, but also a suitable soil; besides, it must be planted on sloping plains, and to this end mountains or at least hills are necessary to corroborate the reflection of the sun-beams and to render the heat more efficient. As for the exact statement of such districts accurate descriptions and special maps are requisite, it will be sufficient in general to observe, that the proximity of rivers offers the most advantage to this end, as in the vicinity of every river there is always a declivity. Russia has in the aforesaid latitude not only rivers in great numbers, but neither is it wanting in particular districts which have moreover the choicest situations for the culture of the vine; not one of them

them however is so remarkably endowed by nature for this purpose, as the southern half of the tauridan peninsula, which by a semicircular chain of mountains is sheltered from every inclement wind, and in which not only the vine, but the noblest productions of southern Europe and the lesser Asia flourish and abound*. This district, which comprises a circuit of more than twelve hundred square geographical miles, and is already formed by nature into a beautiful garden, might by diligence and industry become a russian Champagne. But also in other districts of the country that are susceptible of the culture of the vine it would richly repay the labourer, and, if only the sixth part of the aforementioned surface were properly cultivated and peopled, it would produce wine enough to answer at least a half of the demands, which Russia at present obtains at the expence of the balance of her trade from foreign countries.

Hitherto the vine has been cultivated in these parts as a business of small concern, and the process by which it is managed is so bad, that the wine here produced scarcely deserves a place among the products of Russia. As some of the nations dwelling here have pursued this business for ages past, and yet in the treatment and nurture of the vine-stock have made no farther progress, it is

* See the description of this charming region by Pallas, in our first volume, p. 32.

plain that the only possible means for improving this culture is by sending foreign vine-dressers to those districts for rendering their better method more common by sensible manuduction and practical directions. An undertaking of this nature, however, cannot be the work of private individuals, but requires the powerful co-operation of political œconomy, and might perhaps be most beneficially put into execution by a society, acting under the sanction and patronage of government.

It would be necessary not only to engage vine-dressers, but also coopers to make the casks and vessels, and who are skilled in the art of treating wine and its fermentation in the cellar. It would be most adviseable to procure these people from Germany and Hungary, where they are more expert and industrious. At first foreign vines should only be planted in Taurida; in the other wine-districts it might suffice to improve the present sorts, and afterwards increase them from those planted in Taurida. Fourteen vine-dressers and six wine-coopers would be able to effect this in eight or ten years; and the expences attending the whole undertaking, might, upon calculation, be defrayed with sixty thousand rubles. Perhaps this sum might most commodiously be raised by a company of private persons, especially if it were divided into shares. In the third year the wine obtained, and particularly with the help of the vinegar that would be made, would reimburse a
part

part of this capital; and it is even probable that in eight years the whole capital would be replaced, for in the sixth year the new-laid vine-mounts would yield a complete vintage.

If such a company were set up under the sanction of the government, it would be requisite for the crown to make grants to them of the vineyards already laid out and all other places fit for that purpose. Such private owners as are not in a condition to improve their vine-mounts themselves, should be obliged to relinquish them to the company in consideration of a part of the profit for a given time, on the expiration whereof it should be restored in an improved state to the proprietors: and for a space of twenty years the company alone must have the right of ingrossing all the wine, even that produced by private persons, in order that it may be prepared for use by a better treatment. — As soon as the company itself is able to deliver wine, it would be necessary, at least to prohibit the importation of moldavian wine into the Ukraine; a monopoly, however, that need not continue longer than about twenty years. When that period was elapsed the holders of shares would lose the common use of the capital they advanced, which hitherto must have brought them an usurious interest.

That all the attempts which have as yet been made for improving the culture of the wine have failed, has been partly owing to this, that regard

has only been paid to the presses and the treatment of the wine, without previously improving the culture of the vine itself. The exertions of individual proprietors have in part been attended with greater success; but, as an alteration of such importance cannot become general by solitary undertakings, hardly any other means would be so fitted to the attainment of this end, as that now proposed.

SECTION VII.

Forest-culture.

FOREST-CULTURE, in all populous countries on the continent, forms a branch of producing employment, having not only in view the preservation but the propagation and increase of the useful kinds of wood. In the extensive plains, and on the forested mountains of Russia, where the surplus of forests is a hindrance to culture, such extreme precautions would appear to be useless; but, if nature has so liberally and richly provided for the supply of this necessary in the northern region, yet the demands for it are nowhere greater and more urgent than here, and the preservation of this source of subsistence is the more an object of public concern, as a country of such vast extent is not everywhere possessed of the like products, and must with the surplus of one province supply

supply the deficiencies of another. With all her wealth in forests, Russia, however, contains districts that are totally destitute of timber and fuel; and, even in the governments, where these necessities of life were lately in abundance, the increasing population and industry have made the decline of them very sensibly felt. The immense consumption of wood in a territory where it is necessary for eight or ten months of the year to provide against the cold, and where almost all the habitations in town and country are constructed of timber, rises in the same proportion in which the number of people increase. The useful practice of malting the corn, the grubbing up of forests for making fields and meadows, the producing and the working of metals at the numerous mines, the support of a double navy, the many work-shops of artificers, the various requisites for housekeeping, diminish the stores of forests, as industry, luxury, and the accommodations of life are augmented. Add to these the great exportation of forest products, the amount whereof is ever increasing with the increasing demands of other countries, and the extension of commerce: and all these causes together render a deficiency in wood in some districts already perceptible, the farther effects of which are of an alarming nature.

The governments of Archangel, Olonetz, Tobolsk, and Irkutsk, have a real superfluity of forests;

rests; in these enormously large provinces the eradication of them is in some degree as necessary as the preservation of them in others. The governments of Perme, Kazan, Smolensk, Mohilef, Minsk, Tschernigof, Voronétsh, Ufa, Tula, Simbirsk, Orel, Käluga, &c. are richly furnished with them, not only supplying most of the forges and metal founderies from their forests, but also sending excellent ship-timber to the yards. Most of the other provinces possess a sufficient store for their own consumption; but a few of the southern governments, as Kief, Kharkof, Kursk, Ekaterinofslaf, and Taurida, are in general but scantily provided.

Of the several classes of trees, those that have narrow pointed leaves * are chiefly indigenous in northern Russia, where they form forests of prodigious extent, among which the FIR †, the PINE ‡, and the BLACK PINE § are the most common and most widely diffused. The latter are every-where in the greatest plenty, and in general afford the most wood as timber for fuel and for burning into charcoal, as the pine yields the most pitch. The SIBERIAN CEDAR || is found particularly in the uralian mountains, but this fine, strong, and aspiring tree is almost constantly used only as the

* Called by the Germans *nadelhölzer*, or needle-timber, from their leaves growing in that shape.

† *Pinus picea*. LINN.

‡ *Pinus abies*.

§ *Pinus sylvestris*.

|| *Pinus cembra*.

pine;

pine; and the Siberiaks, like the inhabitants of Louisiana, frequently make no conscience of cutting down a whole trunk to enable them the more easily to pluck off the nuts or cones, which, besides their consumption as a fruit, yield an excellent oil. The LARCH-TREE * grows in the north of european Russia, and also on most of the Siberian mountains. On the sea-coasts this useful timber, on account of its resinous quality, is advantageously employed in the construction of ships, as in many other districts for piles and erections in the water, and at the Nertschinskian mines it almost alone supplies all the charcoal. In the mountains of Olonetz and Ural turpentine is drawn from it, and its fungus is collected, which is also exported. The gum yielded by it might be of use to the apothekes †.

Among the umbrageous trees the BIRCH is the commonest, which by an economical use of it is

* Pinus larix.

† Every larch-tree, on wounding its outward bark, yields a clear, yellowish, viscous resin, equal in all its properties to the best venetian-turpentine, and on the same trees is produced a gum soluble in water, brown, and otherwise very similar to the gum arabic or gum senega; consequently, this tree contains in its sap-veins two sorts of matter entirely different. The Siberian country-people collect no more of the gum than they want for a few domestic remedies, and not more of the purgative fungus of the larch, *agaricus officinarum*, found in great quantities in the forests. Pallas, travels, tom. i. p. 451. tom. ii. p. 127. 213.

fer-

serviceable in various ways. The bark of this tree is employed in tanning and in preparing tar, likewise a multitude of cylindrical vessels are made of it, for holding kaviar, butter, fruits, and other articles. With the leaves a yellow dye is made; the sap affords a well-tasted liquor called birch-wine, and the wood is consumed as fuel in the houses as well as at the mines and manufactories. The alder, a degenerate species of birch, grows generally in wet and swampy districts. Next to the birch, the LINDEN is in the greatest abundance, from which, likewise, Russia derives more benefit than is done anywhere else. The thick bark is usually made into baskets for carriages and sledges, into boxes and trunks, into coverings for cottages, &c. The inner-bark is the material of a very extensive manufacture of mats both for home and for foreign consumption. Of the rind of the young shoots many millions of mat-shoes are platted for the boors; the wood is sawn into boards wrought up into canoes, burnt into pot-ashes, and from the blossoms of the linden the bees suck an excellent nourishment. The OAK, that venerable and useful tree, is indigenous only in the european part; it is most frequently found in the governments of Kazan and Voronetch, where it is chiefly employed in ship-building, but also in Little and White Russia it forms considerable forests. — The ASH and the WILLOW grow almost everywhere; but BEECH, ELMS, the MAPLE, and

and the POPLAR, are chiefly the growth of the southern regions *.

This rich store of forest-trees, of which we have named only some of the most common and useful kinds, yield not only an extraordinary number of products for home consumption, but also several very considerable articles of export. In the year 1793 the value of the latter in specie amounted to upwards of two millions and a half of rubles, when Russia shipped off to the value of 1,744,000 rubles in masts, balks, and deals; 394,000 in pot-shes and Barilla; 249,000 rubles in mats; and 150,000 rubles in pitch, tar, and resin. The preservation of so important a source of national wealth is therefore in a twofold regard a very material object of public prosperity; of the little concern, however, that is paid to the culture of the forests, the following account may bear testimony:

The prodigious consumption of wood rendered necessary by the climate, the habits of life, and the occupations of the inhabitants, is in Russia greatly increased by a WASTE almost incredible. Almost all the dwelling-houses and buildings in the towns and in the open country are constructed of entire balks; and this custom is continued though many towns have an excellent opportu-

* Herrmann's statist. schild. p. 217—227. Falk's beytrage, tom. ii. p. 93—282. Statist. uebersicht der statthalt. des russ. reichs.

nity for making bricks, and notwithstanding the numberless depredations committed every year by fire all over the empire. In the same manner most of the high-roads are laid, almost always consisting of balks lying close together and covered with sand, the repair of which alone requires the timber of a whole forest. Bridges, fences, inclosures and the like are here almost universally made of wood; live hedges are seen but in extremely few places, where the want of wood obliges the countryman to plant them. By an old custom, which still prevails in some provinces, the trunks of trees are not sawn into planks, but riven in two by the assistance of a number of wedges; and, instead of the plane, smoothed with the ax: whereby much useful wood is lost in chips, which are seldom thought worth picking up. The national practice of the warm baths, likewise, devours a monstrous quantity of wood; and, as no frugality is observed in any kind of firing, or in any thing else: so likewise in this respect the consumption is uncommonly greater than is necessary to the purpose. Many districts are in possession of turf-moors as well as kennel coal, but the use of this fuel is as yet so confined that it deserves no particular notice. Instead of candles or lamps, the country-people, and even the inhabitants of small towns, use luchinki, or thin split laths of dry birch; which, besides the needless waste of wood, with

the least neglect are apt to set the house on fire, and too often cause conflagrations that reduce whole towns and villages to ashes. The use of the mat-shoes deprives most provinces of an incredible quantity of the best and straightest young saplings of the linden, which by this extremely injurious practice are diminished twice as much as they could grow by the laws of nature. The damage done by the rhœdungs has been described before; but, besides the irreparable injury thus committed on a certain tract of forest, it not unfrequently happens, that in this manner a whole forest is set on fire, which in a few days lays waste many acres of excellent trees; and it is often seen, that places thus burnt up do not begin to shew a fresh increase of wood in twenty years. If we add to these the corn-distilleries which multiply immoderately in most of the provinces, nothing is more easy to be accounted for than the scarcity of wood which so many provinces already feel, notwithstanding the immense store of forests, and which in particular districts is so great that timber and firewood cannot now be bought under three times the price they were sold at a few years ago; nay, that even several of the siberian mine-works are obliged to stand still or are entirely abandoned*.

* That several of the siberian mine-works are brought to a stand for want of wood, and in some instances are obliged to be entirely given up, is confirmed by Herrmann in his
statistical

Not to lengthen unnecessarily the list of examples here adduced of the prevailing extravagance in the article of wood, it will be more beneficial to subjoin a few illustrations by which what has been advanced may be rendered more intelligible at least to the english reader.

How small the number of brick buildings must be in Russia may be gathered from the statements in the tabular survey of the governments of the russian empire; by which it appears, that all the towns in fifteen of the governments that contain the greatest number of buildings amount to only 4499 brick, and 107,261 wooden dwelling-houses. During the reign of the late empress, however, the number of the former was greatly increased, as that princess endeavoured to encourage the construction of them, not only by a variety of wise regulations, but even by very considerable presents and money advanced. Till the year 1776 there had been received by the towns of Tver 200,000, Staraya Russa 10,000, Dorpat 20,000, Dorogobusch 60,000, Kargapol 10,000; Kazan 200,000,

statistical accounts, p. 313, and by the oeconomic society in their selection of papers, tom. ii. p. 4, not to mention other evidences of the fact. How necessary it is to adopt some method of sparing the forests in such districts is apparent from the government of Perme, where in the iron and copper mines alone, a million of baskets, i. e. 20 million of poods, or 800 million of pounds of charcoal are consumed every year.

Belozero 2000, Torjok 5000, Serpukof 10,000, Bielgorod 100,000, Astrakhan 10,000 rubles for this purpose; which sums were distributed among them chiefly on account of the frequent devastations by fire, and for the building of brick houses. — The same holds good of the highways which were furnished with brick bridges at the imperial expence, and, by an excellent plan, were to have been entirely paved with stone.

In order to render more general the sawing of balks, it was ordered some years ago, that all galliots or barks passing down the Ladoga-canal to St. Petersburg, if they were not built of sawn planks, should pay a certain toll. At present there is not a single bark to be seen of hewn balks, and the toll, having attained its end, is now abolished. — Formerly every two planks cost a whole tree, as the trunk was cleft in two and the halves chopped away into clumsy planks.

Concerning the use of the luchinki, or the lath stuck in the timber wall at one end and lighted at the other, to serve the purposes of a candle, there is a passage in Lepekhin's travels, from which the universality and the pernicious effects of it plainly appear: "I can affirm," says he, "that on my whole journey (from St. Petersburg through Mosco to Vladimir and Murom) I saw not a single village where any other lights were used, even not excepting the poor inhabitants of towns. Besides the smoke, so unwholesome and
" so

“ so prejudicial to the eyes, besides the needless
 “ havoc of the birch-wood, only let us figure to
 “ ourselves the cottage of a boor all black and sooty
 “ with smoke, and covered with thatch, in which
 “ are flax for spinning, and yarn, dry brooms,
 “ and other combustible matters. Then, if we
 “ consider how carelessly the people are ever run-
 “ ning about with the burning light in their hands,
 “ and how the glowing parts are continually drop-
 “ ping off; we shall cease from being surprised
 “ at the sight of such a number of boors going
 “ about to get together a little seed-corn by beg-
 “ ging of their neighbours*.”

The apologists for the practice of wearing the
 matted shoes, bring as reasons, 1. the poverty of
 the boors, 2. the quick growth of the linden, and
 3. that the making of them forms no insignificant
 occupation for their bye-hours. The first is only
 in part well founded, as the boors are not every-
 where poor, and as these shoes in many parts stand
 them in more money than leathern ones would
 cost. — The young linden sticks grow undoubt-
 edly the faster afterwards, but not in the same pro-
 portion with which they are cut down. To every
 pair of shoes from two to four young linden stems
 are requisite. In winter the boor wears his platted
 shoes it may be ten, but in the working season
 scarcely more than four days. In the whole year

* Lepekhin's travels, tom. i. p. 36.

therefore he wears out at least fifty pair, to the making whereof, if we take a middle number, 150 young linden-stems are demolished. A fresh linden-shoot in moist places is not fit for peeling to the purpose of platting into shoes in less time than three years; on a firmer soil, it takes longer. Accordingly the linden-wood is constantly diminishing faster than it grows. — The benefit arising to the boors from the making of these mat-shoes cannot be considerable, as they are very cheap in parts where there is linden enough; if the countryman would employ the time he spends in this in some other trade in wood, while he was benefiting the country he would be also increasing his private gains*.

Of the extraordinary rise in the price of wood, the following statements may serve as an example. A fathom of birch-wood for fuel, each billet an arshine in length was worth in the year 1770 at St. Petersburg 1 ruble 10 kopecks, and in the year 1790 it could not be had under 2 rubles 60 kopecks. A hundred fir balks of a certain length and thickness at the same place in the year 1740, cost 12 to 16 rubles. In the year 1790, 100 to 120 rubles. A hundred deals in 1740, sold for 7 rubles, in 1790, 15 to 20 rubles, &c.

In some districts of the empire that are rather poor in wood, for instance in the Ukraine, this de-

* Lepelkin's travels, tom. i. p. 39.

solation of the forests, however, is not by far so flagrant. Here for a long time the timber has been sawn; poor people build their houses of wattles, set up double and strengthened by stakes, the interstice being filled up with rubbish of pounded stones and clay; even the cornices and window borders in the better houses are of plaster. Sheds, hovels, cottages, fences are universally made of wattles, and in the steppes of reeds and rushes. Excepting towns and people of quality the Ukrainers have not yet adopted the practice of warm bathing. Instead of luchinki for lights in the house, the common people use tallow and linseed oil, which they burn in pans; or they make tapers of herbs and rushes, which burn very bright and without smoke. For warmth and cooking beside wood they use rushes and straw. Nobody wears mat-shoes; the old lindens are made into bowls and other vessels for household uses and hollowed out into bee-hives. Almost all the ukrainian countrymen have groves of trees about their dwellings, and their yards and kitchen-gardens are surrounded with trees. — But the distilleries are the principal destroyers of the common forests here*.

As there are no general forest-laws or regulations in the russian empire, and the control over the preservation of the forests chiefly depends on the

* Beschreibung der statthalterschaft Kharkof, im Journ. von Rußl. tom. ii. p. 94.

sagacity and inclination of the officers and freeholders, the appropriation of them is subject but to few limitations. The government intermeddles not at all with the management of PRIVATE FORESTS, as every nobleman has the entire lordship and the free arbitrary enjoyment of the products of his ground; on extremely few estates therefore is there any kind of forest-police, since the very first principles of forest-culture, as the allotment into falls, the replanting and sowing are utterly unknown even by name to the generality of land-owners. Their care at most extends to an adjacent park or piece of pleasure-ground, which serves as an ornament to the manor-house or is favourable to hunting. The boor is licensed almost everywhere to take from the forest what wood he wants, when and how he pleases, and he usually employs this licence as suits his own temporary convenience and advantage, but in a manner very destructive to the whole. The forest is often the resource to which he applies for raising the money he has to pay his lord as obrok; and the latter never once dreams that he is purchasing this trifling advantage at the expence of a ten times greater damage to his woods. As it is seldom refused to the boor to choose out a rhœdungs-place wherever he thinks proper; it likewise follows, that the owner perhaps pays for the better harvest of his vassal with the most valuable of his timber. Instead of using the branches broken off or the trunks thrown

thrown

thrown down by the wind, the aftermath, the roots, the stumps, and other relicts of the felled timber, the boor culls out exactly the finest trees, not merely for the sake of getting pitch and tar, or for burning into potashes and charcoal, but for his ordinary firing. — Prejudicial as this carelessness is to the forests of private proprietors, it would be extremely difficult, in the present state of the boors, to introduce a general reform in regard to the forests. Being unable, as vassals, to possess any immoveable property, they must be allowed for their support the free use of the forests, which by immemorial custom they treat as they think fit. Certainly however some stop might be put to these excesses; for example, by obliging the boor to fetch his necessary wood only from the falls that are from time to time marked out; but then it could not be ascertained how much should be allotted to each boor at the annual fall, as his necessities are not always alike, and can seldom or never be accurately calculated. Even in case he should cut down more than he has occasion for, and only that he may sell the wood, this need not everywhere be denied him, as then some towns would be left entirely without provision, and the boors themselves would be deprived of a resource in case of necessity, which in times of general dearth or in other distresses, would protect them from total destitution. In the districts where the countryman chiefly lives by the products of the forests,

forests, as in the governments of Archangel and Olonetz, such a restriction would turn out to be highly detrimental. The proposal for obviating these difficulties by assigning to every cottage the fee-simple of a tract of forest, might not be in all places practicable, as it would excite just cause of apprehension, that the possessor for the time being would soon lay waste his portion for the sake of securing a present advantage, because the state of vassalage binds the lord to provide for the maintenance of his boors *. For all these reasons it is not perhaps possible to introduce the foreign management of timber into Russia: it nevertheless remains certain that a greater saving to the forests might be effected without difficulty, as is even shewn by the example of several russian land-owners.

The FORESTS OF THE CROWN are treated with somewhat more care, and though even for these there are no forest-regulations subsisting, yet there is no want of laws committing the guardianship of them to proper officers, and forbidding the waste of them under severe penalties. The ulosheniye had already regard to this important object, and several ukases of Peter the great assign particular punishments to the felling of the forbidden timber, for which purpose the forest-officers of that time were provided with peculiar instructions. In the sequel, and after the wardens were abo-

* Lepekhn's travels, tom. i. p. 38. Hupel's staatsverfassung, tom. ii. p. 393.

lified as unnecessary, the land-surveying chancery received still more circumstantial precepts relating to the culture and sparing of the forests, and the forests of the crown are now under the guardianship of the œconomy-directors and the finance-chamber of every government *. One of the latest ordinances concerning this matter, is a ukase of the 26th of March 1786, in which we find the following remarkable order: that all the crown-forests in the government shall be circumstantially described, surveyed, surrounded with ditches, and partitioned into timber-falls; and again in December 1791, the senate issued a precept to the governors-general and their deputies, shewing in what manner the said orders and instructions were to be put in execution.

As the scarcity of wood is continually increasing even in districts where are establishments for working the mines, it becomes necessary that more effectual measures should from time to time be adopted to put a check to this profuse dissipation

* Some of the most remarkable of the laws relating hereto are the following: Of ruining, cutting down, and setting fire to the forests: Ulosheniye, cap. x. sect. 218 to 224. Punishments for felling the forbidden wood: Ukase of Feb. 9, 1720. Instruction for the warden concerning the ship-timber, Feb. 9, 1722. For the chief ranger: 1723. Instruction for the land-surveying chancery; cap. iv. sect. 12. and 64; also cap. 6, sect. 20. What wood shall not be used for making tar: Nov. 3, 1766. The forests are relinquished to the absolute disposal of the owners of estates, Sept. 22, 1782.

of the treasures of the forests. The general means by which a better management might be brought about in this material department of political œconomy, are for the most part so plain and simple, that the application of them can be attended with no great difficulties. The chief would be to introduce a good forest-regulation suited to each particular government, and to see that it were duly observed. A double attention in this respect ought to be paid to the forests which skirt the Dvina and the Dniepr, from which the fine masts and other timber are obtained for the Riga trade; again, the oak-forests about the Inguletz, the Donetz, and about the little rivers Mius and Krinka in the territory of Taganrok; in fine, the forests which border the Don in the districts of Pavlofsk and Voronetch consisting of oaks and firs, the preservation of which is of great consequence to the navigation of the Euxine. The forests in the vicinity and on the margin of the Volga, in the governments of Kazan and Nishney-Novgorod, are useful for the navigation of the Volga and the Caspian. From the immense forests of firs which surround the head of the Volga, perhaps might be obtained mast-timbers, the transport of which along the Pola, and by the Ilmen-lake to St. Petersburg, might be easily effected. Of nearly as much importance are the forests on the Oka, the Moksha, and the Kama, mostly consisting of lindens, the sparing whereof would be very desirable, as well in regard

regard to the trade in bark-mats as on account of the honey and wax. Lastly, the forests in the governments of Archangel, Olonetz, and Vyborg demand the strictest œconomy, in order to derive from them a constantly equal utility; and the same may be said of the districts of Nertschinsk, Kolyvan, Perme, Ufa, &c. for having always a store of charcoal sufficient for the smelting of metals*. The additional wealth in forests, which Russia has acquired by the late annexation of the polish provinces, should likewise be saved from ruin by a better management. — For the attainment of these important purposes, however, the mere forest-police is not always sufficient, if it be not connected with a careful nurture of the forests. Nature provides not, at least not at every season and in every district, so amply and rapidly, for the multiplication of the various kinds of trees, as human industry, even with the most frugal procedure, advances their destruction. It would, therefore, be necessary to have recourse to the method of sowing and planting woods, universally known and practised in other countries, and to introduce this artificial culture, where the scarcity is become sensible. Generally speaking, the russian countryman has no idea of what is properly called wood-sowing, endeavours should therefore be used to teach him, by practical directions, the time when every species of tree-seed is at its maturity, the best season for sowing

* Guldenstädt's akad. rede, § 27.

it, and the most approved manner of treating these objects *.

In regard to the forests belonging to the crown, such an improved forest-culture as this, and grounded upon principles, might be universally introduced; but as to the forests that are private property, it would be difficult to reduce the detail into method, and still more difficult to put it in practice; as on one hand the crown has granted to the owners of estates the complete occupancy of their lands, and on the other hand the strict execution of the forest laws would be liable to infinite difficulties and expence. For these forests then it would be sufficient to deliver certain general regulations in the using of them, conformable to the relations of the proprietors and the boors, and confined solely to the prevention of the great damage which may accrue to the country in general from a thoughtless and profuse expence upon the forests. If it were possible, for example, to confine the drawing of tar and the burning of pot-ash to the broken branches and unserviceable trees, not only a great deal of fine wood would be saved, but

* A very practical direction for sowing the forests in the northern regions of the russian empire has been published by the oeconomic society in the xxviiith part of their useful transactions. In the circle and the government of Vyborg have been sown since 1788, at the instance of the admiralty at St. Petersburg, great numbers of larch trees, of which 12,000 are in the most flourishing condition. Probably this good beginning may be productive of more general effects.

the

the forests themselves would be cleared and bettered by it. The use of bark-shoes and lath-lights, in a nation possessing a surplus of hides, oil, and tallow, should by degrees be entirely abolished, as it begins already to be less frequent in some districts; the building of brick-houses should be encouraged, the rhœdungs should be confined within some restrictions, and the planting of live hedges be brought into practice. Nothing is impossible to a wise and active administration, if the people be but properly made acquainted with their true interests; and how easily might it be proved to landowners, that their private advantage as well as the benefit of the whole is connected with economizing and preserving the forests!

SECTION VIII.

The Management of Bees.

THIS, which in most countries of Europe forms but a very insignificant branch of husbandry, is in Russia an important business strenuously carried on, as the chief means of subsistence to some nations, and as it obtains a product which is even not indifferent to foreign commerce. So considerable a quantity of wax is produced in the Russian empire, that, after deducting the home consumption, about 12 to 15,000 pood of it are exported only from the ports of the Baltic. Honey likewise forms an important article of inland consump-

consumption, as almost all Siberia is provided with this necessary from european Russia. The best sort is the white linden-honey, principally obtained from the hives of tame bees in those parts where the linden-forests most abound, as on the Oka, the Don, in White and Little-Russia, in the newly-acquired polish provinces, and in the western tracts of the southern Ural. Of both products Russia exported in the year 1793 to the amount of upwards of 383,000 rubles, whereof the export in wax and wax-candles alone amounted to 378,000 rubles.

The culture of bees is prosecuted in Russia in a way peculiar to itself, and more than anywhere else in the gross. Bees are kept, indeed, in most of the governments, but the WILD culture is by far more vigorously pursued, and particularly in the uralian forests in the government of Ufa, whereas beyond the uralian mountains and throughout Siberia there are not any bees. The nations which chiefly devote themselves to this business are the Bashkirs, the Tartars, the Tschuvasches, the Tschheremisses, and the Mescchtscheriæks, particularly in the governments of Kazan and Ufa. Among the Bashkirs are individuals who possess, besides their beegardens, some hundreds, nay some thousands of wild beehives in the forests, and obtain yearly from forty to a hundred pood of honey. The manner of proceeding with the bees, is, with all these nations, like that in use among the Bashkirs

kirs, accordingly we will give a brief account of only theirs*.

Most of the bee-stages are in the forests, where these insects spontaneously enter the hives prepared there for them by the people. To this end the Bashkirs look out for the strongest and straightest trees of the hardest kinds of timber, on which, at the height of four, five, and more fathom above the ground, they construct the bee-house, by hollowing out the trunk plain and smooth, with a tool resembling a chissel, closing the aperture with a board, in which are left little holes for the bees to enter and come out at. The dexterity with which the Bashkirs perform this work, and climb up the loftiest and smoothest trees is truly surprising. A sharp hatchet and a common rope is all that they require. The workman places himself against the tree, fastens the rope round his body and the trunk, makes with his hatchet at a certain height a notch in the tree, and setting his feet against the tree, springs, by the assistance of the rope, up to that height, whence he makes another notch as high as he can reach, and proceeds in this manner till he has attained the proper elevation. Here, where he must tarry longer, he makes his step more commodious, and resting in the rope performs his necessary work, for which he has brought up the tools in his

* Pallas, travels, tom. ii. p. 18.

girdle. Below the bee-house all the branches are carefully cut away, to render the tree more difficult for the bears to climb. Notwithstanding which these animals, still pretty frequent in the uralian forests, are the most dangerous enemies to the culture of bees; and therefore the most arms and other means are employed against them.

The most usual of these is the contrivance of furnishing the whole trunk of the tree with knives or iron spikes crooked upwards, which the bear indeed in clambering up is cunning enough to avoid with great dexterity, but in sliding down they generally cost him his life; yet there have been instances that old thieves of this species even in climbing up have loosened and destroyed these weapons with their paws. With surer success a thick block of wood is employed, by being suspended before the aperture to the hive, which as often as the bear, with increasing fury, throws from him, swings back, and hits him on the head on rebounding from the tree. At length irritated to the utmost he increases the violence of his efforts, and at last exhausted by rage and exertions, he falls upon the spikes that are planted on the ground to receive him. But the most ingenious method is a trap of the simplest kind, by a square board with a rope at each corner united at top, (like a large scale which we see in a wholesale shop,) and fastened to a branch in such manner that the board is on a level with the door
of

of the hive. The bear, finding this seat so conveniently placed to receive him, gets into it, and begins tugging at the slight fastening to the trunk of the tree; which hinders him from getting at the hive; having loosed the catch, the board swings off with him to its perpendicular direction on the branch to which it is suspended; where he is either obliged to sit in the air till his pursuer arrives to shoot him, or to throw himself down on the pointed stakes that are planted round the foot of the tree. — Another foe to the beehives is the wood-pecker, who is kept off by thorns and twigs tied round the hive.

It has been affirmed by Maraldi and other writers, that in one hive there are seldom more than 18,000 bees. Counsellor Rytschkof at Orenburg weighed in an accurate balance dead bees, and found that seventy-five went to a solotnik; but for greater certainty reckoned only fifty to the said weight. A good swarm contains in those parts from ten to twelve pounds, and the very worst, of which they usually bring two or three swarms into a hive, three or four pounds; yet there are even swarms of eighteen to twenty pounds. According to the forementioned weight; therefore, the bees in twelve pounds must be reckoned at least at 57,000, and in nineteen pounds at least 112,000 bees. If this observation do not refute the calculation of the french author, it at least shews, that the bees in France

and those in Orenburg must be of very different kinds.

It has been farther asserted, that the bees, as very cleanly insects, collect their honey from trees and flowers alone. But in the district of Orenburg it is uniformly maintained, that likewise blood, flesh, and other less cleanly substances are of service to them. Rytschkof, desirous of knowing from his own experience whether his bees would feed on flesh, caused a fowl to be killed and drawn, and put it in a hive, which remained three or four days untouched; but as soon as it began to putrefy, it was devoured to the very bones*.

SECTION IX.

The Culture of Silk.

SILK is now become a necessary of such importance, that endeavours have been used to introduce and to encourage as much as possible the culture of it even in the countries lying to the north. The luxury of wearing silk articles of dress, has found such general admission into Russia, even among the lower orders of people, especially of the female sex, that the sums annually

* Von der bienenzucht in der kasanischen und orenburgischen gegend; im St. Peterfb. journ. tom. i.

paid for silk and silken goods cause an enormous expence, at which we should doubtless be astonished, if it were to be accurately calculated. According to Guldenstædt's statement Russia paid in the year 1768 for raw silk 343,000 rubles, and 671,000 rubles for wrought silk; but in these sums it is scarcely probable that the importation of persian silk by land is comprised, and as all the articles of import have considerably arisen since that time, it is to be supposed, that this expence also must be much greater. — So material a rubric of the general necessities consequently demands the attention of the political œconomist, as it is almost entirely supplied by foreign industry, though the russian empire comprehends within its pale large tracts of country which offer all possible advantages to the culture of silk. The white and black (or tartarian) mulberry-tree, the leaves whereof are the only food of the silk-worm, are found very plentifully in several parts of southern Russia, e. g. in Taurida; on the shores of the Terek, between Mosdok and Kitzliar; on the shores of the Kuma, near Madshar; on the shores of the Sarpa, about thirty versts from Sarepta; on the shores of the Don, at Azof, and Tscherkask; on the shores of the Volga, at Astrakhan, near Tzaritzin; on the borders of the Achtuba, at Saratof; and on the shores of the Khoper, near Novokhoperk. In the Ukraine and in the government of Ekaterinopolaf we find them likewise in abundance; name-

ly, at Beloffkaiya, Kosloffkaiya, near the fortrefs of St. Elizabeth, near Poltava, Staroi-sensharof, about Mirgorod and Lubni, at Neshin, Baturin, Podlipnoye, and Glukhof, and laftly in the greateft multitudes about Kief. In all thefe places the mulberry-tree thrives excellently in open air; fo that plantations of this ufeul tree might everywhere be boldly undertaken in the regions between the Dniepr and the Ural, within the 53d degree of north latitude; namely, in the governments of Caucasus, Taurida, Ekatarinoſlaf, Voſneſenſk, Kief, Tſchernigof, Kharkof, Saratof, Voronech, Simbirſk, and in the milder diſtricts of Kazan and Ufa*. Hitherto the culture of ſilk has been confined to the parts adjacent to the Terek, near Aſtrakhan, on the borders of the Achtuba, near Tzaritzin in the government of Saratof, at Beloffkaiya and Kief, and a few other places, but not by far with that ſucceſs which the importance of this branch of induſtry demands, and which the natural advantages of the country ſeem to promiſe.

Befides the wild mulberry-trees which grow plentifully in the caucaſean territory, the tartarian and the white, the feeds whereof are brought from Perſia, are planted in all the vineyards, particularly about the Terek. There is no doubt that theſe plantations might be carried on to a much

* Guldenſtadt's akad. rede, 43.

greater

greater extent here, where the culture of silk would furnish a suitable employment particularly for the Tartars on the terekian and kubanian lines. As the Kozaks are disposed to marry early in life, perhaps the plantation of a certain number of mulberry trees might be made a condition for obtaining the permission necessary to that end, or accepted as one stipulation for exemption from the service. — The silk-worms are fonder of the leaves of the white than of the black mulberry-tree; but, it having been discovered that, after feeding on the latter they spin a stronger silk, they are at first kept on the leaves of the white and afterwards on tartarian trees. The mulberries which are not consumed raw are generally made into a spirituous liquor by fermentation, somewhat resembling cherry-wine, and is sold by the cask very cheap*.

Along the Achtuba, in the tzaritzintfian circle of the government of Saratof, the mulberry-tree begins first to mingle among the commoner sorts of trees; though it is here but of very inferior growth; and, being also exposed to the inundations of the Volga, and to the fire of those mighty hunters, the Kalmuks and Kozaks, it naturally cannot flourish in these parts to any great degree without particular attendance. For some years past, therefore, regular plantations have been laid out

* Falk's beytrage, tom. ii. p. 254.

on flat elevated spots of the low-lands, where the soil is moist enough, without being exposed to the inundations; the wardens appointed over the silk-culture here have likewise caused sheds to be built, in which the silk-worms are conveniently bred. — These plantations might be infinitely extended the whole length of the Achtuba, and indeed upon the high places of the islands; and all along the lower Volga, on the Kuma, and quite to the Terek, so rich a silk-culture might be introduced, that these hitherto unfruitful and arid regions would become one of the most populous and beneficial countries of the empire, so as to be the russian Ghilan. This business has till now been carried on, properly speaking, by only two villages situated on the Achtuba, the people of which are called Besrodniye, parentless, because the first inhabitants were run-aways who either could not or would not tell whence they were sprung. In both of them, besides their wretched agriculture, the breed of cattle and the fishery are so productive, that the inhabitants certainly would not addict themselves to the culture of silk if they were not compelled to it by the officers who have the superintendance of it, who oblige them to deliver annually, in lieu of the capitation-tax, a stated quantity of silk in consideration of a stipulated payment*. So early as the year 1720 a russian merchant, named Duchof,

* Pallas, travels, tom. iii. p. 659.

made a small beginning in this culture on the *Achtuba*; however it came to nothing, till it was set on foot again in 1756 at the expence of the crown. Nevertheless the profits arising from it are so trifling, that, according to the account of one of the latest travellers, only three or four pood of silk are annually obtained there; and even the climate is so unpropitious to this species of industry, that sometimes all the silk-worms are killed by the frost*. — On account of the overflowings

* The testimony given by this traveller (the academician *Oseretzkoſkoi*) of the state of the silk-culture on the river *Achtuba*, is by no means favourable. From his account we learn that the number of these stragglers enrolled to this business amounts to upwards of 7000 persons of both sexes, and the overseer of the institution receives with open arms all comers who cannot exactly call to mind their pedigree, as they are very useful to him in his fabric, (in which annually three or four pood of silk are spun!) One of the officers belonging to the fabric every year fetches the silkworms' eggs from *Kitzliar*, but which do not always succeed on the *Achtuba*; in the year 1782, for example, all the worms were frozen, and not a thread of silk could be spun. "If even it be true," adds our traveller, "that the overseer of this fabric has the art of giving a particularly good quality to his silk, and if even this particularly good silk be sent hence to *Petersburg*, it yet always remains a doubt whether even this silk was got at the *achtuban* fabric, and it is more than probable that it properly owes its origin to warmer climes than *Astrakhan* and *Kitzliar*; which is even confirmed by the inhabitants of these towns." *Beschreibung von Astrakhan; im Journ. von Russl. zweyter Jahrgang, tom. i. p. 41.*

of

of the Volga, the mulberry leaves, as the worms usually creep out about the middle of May, are obliged to be gathered in canoes.

In the territory of Kief the mulberry-trees are so numerous that they not only compose a little wood in the imperial gardens, but they are found among almost all the inhabitants and about every house: they are moreover so large, as ordinarily to measure a foot and a half in diameter. In Podol, a suburb of Kief, is an imperial mulberry-plantation, containing five hundred large mulberry-trees, and a building for breeding of silk-worms; and yet the management of them is here carried on as nothing more than an amusement, and which the inhabitants care but little about, though it might be rendered so profitable*. Not much better is this business managed in Astrakhan and the other places abovementioned; so that what is procured by this industry scarcely merits a place among the products of the Russian empire.

As the great benefit which Russia might derive from the culture of silk is not to be doubted, and as there are also districts enough where it could be carried on to the best advantage, it is not so necessary to recommend it in general as to discover the means of procuring admission for so desirable and lucrative an occupation among the inhabitants

* Guldensædt's travels, tom. ii, p. 345.

of the southern provinces. The imperial establishments which have been made to this end, have not as yet been attended with the expected effects, and will perhaps never produce any better. In order to raise this branch of industry, endeavours should be used to excite a spirit of enterprise in private persons, by convincing them of the advantages that would accrue to them from it, and furnishing them with the best means for carrying it on. A comprehensive set of directions for the culture of silk, backed by the example of experienced foreigners, premiums for the planting of mulberry-trees, suitable rewards for the production of a certain quantity of silk, provision for the commodious and safe disposal of the silk produced, and a hundred other means of like nature might be put in practice by the government and even by the proper officers on the spot. How much might be done by these and similar methods was exemplified in Prussia by the late minister of state, count Hertzberg, which highly deserves imitation, and by which particularly are refuted the miserable objections which the great multitude from ignorance and sloth are apt to bring against every useful undertaking.

Since the year 1751, when Frederic II. formed the resolution to introduce the culture of silk into his dominions, this species of industry has had such success, that in 1784, they already counted upwards of a million of full-grown mulberry-trees, and

and in the same year the amount of the silk exceeded 14,000 pounds, which was wrought up in the manufactories of the country into pieces of extraordinary quality. This instance shews, that the prussian dominions, though lying so far to the north, are not ill-suited to this culture, as from inveterate prejudice, it had been constantly asserted. The patterns of the prussian silk that were sent to Italy were esteemed equal to the best silks of Piedmont and Lombardy, and since the prussian manufacturers have got the better of their former notions, they find it not only very serviceable, but even prefer it to the foreign, particularly for stockings and strong goods. — The methods employed for disseminating the culture of silk, and which in general are still employed, consisted in considerable advances of money, to which the king appropriated the sum of a hundred thousand dollars, in obliging the farmers of the royal demesnes to plant a certain number of mulberry-trees, in the distribution of prizes, in appointing inspectors, in directions sent to the country-clergy and village-schoolmasters, &c. When, in spite of all these efforts this culture from the year 1784 began to decline, the king in 1788 erected a particular department with a fund of 12,000 dollars, the presidence and direction whereof was undertaken by count Hertzberg without any gratuity. Since which time the culture of silk in the prussian dominions has gone on with increasing

ing success, and it is not improbable that in a short time it will be naturalized with as beneficial effects, as it is now in the countries whither Justinian transplanted it from China, and Henry the fourth, notwithstanding the remonstrances of Sully, from Italy *.

SECTION X.

Mines.

WITH the vast stores which Russia possesses of animal and vegetable nature, she would be deemed extremely happy, were she even obliged to dispense with the subterranean treasures which the earth incloses in her bowels. A fertile soil and a sky propitious to the greatest variety of productions are to a numerous and laborious people the most infallible sources of prosperity, especially if the disposition to culture be encouraged by a situation favourable to commerce. The Russian empire produces the prime necessities of life in the greatest abundance, and in some measure spontaneously; and whatever is wanting to the inhabitants in more refined and artificial necessities is procured to them by the exchange of their natural products which are everywhere necessary and as universally

* Recueil des déductions, manifestes, &c. rédigés et publiés par le comte de Hertberg, tom. ii. p. 495.

demanded. In this enviable condition, which is ever more flourishing as the population and the industry increases, Russia at the same time enjoys the important advantage of having MINES in her possession, which may be matched with the richest and most productive of those in any quarter of the globe; the working whereof for a century past has created a new national occupation with ample returns, and the astonishing spoils whereof have afforded the means to a beneficent administration for the most extraordinary undertakings. — For enabling us to give a view of the present state of so important a branch of industry with some degree of precision, it will be necessary to preface it with the principal lineaments of the HISTORY OF THE RUSSIAN MINES, a history, which from its very late origin is indeed of no great compass, but not the less abundant in curious and remarkable transactions.

The principal scene of these transactions lies in the cold metallic regions of Siberia, the acquisition whereof, after the lapse of a hundred years, unexpectedly became of such great importance to the russian empire; for though the soil of this enormous country is almost everywhere pregnant with ores and noble as well as useful minerals, the european part however is herein by no means to be compared with the asiatic. The largest works are at present carried on in the URALIAN, in the ALTAYAN, and in the NERTSCHINSKIAN mineral

neral mountains; of less importance are some iron and copper mines in those of OLONETZ, and in several other parts of the empire. In the uralian mountains are gold, iron, and copper mines, which latter are some of the most important in the empire. The altayan mountains contain the richest gold and silver shafts, also veins of lead, copper, and iron, impregnated with gold and silver. But in the nertschinskian mountains are very rich mines of lead containing gold and silver*.

The discovery of these shafts, as well as the origin of the proper mine-working in Russia is of no older a date than the beginning of the present-century, as the single attempts that were made prior to that period for finding and working the metals, were but very insignificant. The nation has possessed iron-ore from times immemorial. The boors formerly collected it themselves, smelted it and made iron of it. When they were deficient in this metal, instead of it they had recourse to hard wood, which, in order to make still harder for their own use and for posterity, they laid in bogs; both methods are practised still in some parts of the empire †. — In Siberia, at a time

* See the characteristics of these and the other mountains, in our first volume, p. 84 & seq.

† Schlœtzer (in his Muntz, geld, und bergwerks geschichte des russischen kaiserthums, p. 94.) from von Haven, Nye og forbedrede efterrætninger om det russiske. Rige, p. 270—283.

reaching back beyond all history, mining was so vigorously practised by a nation who now bear the name of Tschudes, that their various and large Haldes still subsisting have given rise to a great number of newly adopted and in part very rich mines *.

Of proper mining, however, history says nothing previous to the time of Ivan Vassilievitch. This prince, in the year 1491, sent two Germans to the river Petschora on mineral discoveries, who were so fortunate as to find silver and copper ore; but of the farther progress of this business no accounts are extant. During the reign of Ivan Vassilievitch the second, the English, by a treaty concluded in the year 1569, obtained the privilege of finding out and smelting iron ore, on condition that they should teach the Russians the art of working this metal, and pay on the exportation of every pound one denga or half-penny †.

Under tzar Alexey Mikhailovitch, was established the first regular mine-work in Russia, about ninety versts from Mosco, where it is still going

*. Concerning the mine-works of this nation, whom Georgi takes to be the antient Mandshures, an interesting account may be read in Pallas, travels, tom. iii. p. 608—610.

† Of the first arrival of the English and the origin of their commerce in Russia, in the St. Petersburg journal, tom. ix. p. 149.

on at this day. Two foreigners, the one a Dane, the other a Dutchman, who were at Mosco on affairs of commerce, and had found ore in that territory, requested and obtained permission to work it. The moiety of the works erected by them lapsed, on the death of the Dane, to the tzar, who granted it to a Narishkin, to whose family it still belongs, as the heirs of the Hollander are in possession of the other half. The miners and forgers at these works are Germans, who settled and propagated there upwards of a century ago.

These works, the first and only ones in Russia prior to Peter the great, were visited by that monarch, who wrought in them himself, ere he set out on his first journey into foreign countries. In 1698, remaining some time in Saxony, he not only made himself acquainted with the art of mining there, but requested the king of Poland to give him some workmen; and in the following year twelve of them, with a master at their head, and the assayer Bluber, went to Russia, where they found ore in the district of Kazan and Kaluga, and began to work. The emperor, however, finding that with these two establishments he should be in want of people, sent Bluber in 1701 again to Saxony, who returned in the same year with several persons skilled in mining, and repaired immediately to Olonetz, where they opened a mine of copper-ore. The subsequent journeys

of this man gave the first occasion to the discovery of the Siberian minerals, for in the year 1703, he was dispatched to the Permian mountains near Solikamsk, where he found an old mine, whence he proceeded farther along the Kama, and soon after his return to Mosco, making a fresh journey in the districts of Azof and Astrakhan, he pushed forward to Caucasus.

In the mean time the emperor had appointed lieutenant-colonel Henning to be director of the mines of Olonetz; a foreigner of great activity, who restored the old ruinous iron works, and put them in a condition to furnish the new-created navy with large and small cannon and other iron ammunition. In the year 1719 Henning travelled over several countries of Europe for collecting information concerning the state of mines and founderies, and on his return got together, by permission of the kings of Poland and Prussia, a considerable number of master-workmen, by whose assistance he set up several wire-manufactories, forges for steel, hammers for tin plates and making iron bars, steel-furnaces, anchor-smithies, and various machines, all worked by water.

As it appeared from the accounts delivered in, that ore was to be found in almost every part of the empire, Peter the great in the year 1719 constituted a peculiar mine-college, and shortly after sent major general Henning, whom the emperor had promoted for his useful services, in quality of
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of director to Siberia, for the purpose of completing the works there already begun. Henning established a chief mine-office at Ekatarinenburg, and a subordinate office in the territory of Perme, built several workshops, furnaces, forges, founderies, and mills for flattening and flitting, and within the space of six years had made such progress in all these works that the various expences attending them were paid with usury by the metals obtained. In the years 1726 and 1727 he sent annually 9 or 10,000 pood of copper and 140 to 150,000 pood of bar-iron, besides a great quantity of wrought iron and copper, by means of the water-communication, from Siberia to Mosco. These services procured him the rank of lieutenant-general of the artillery and the post of general director of all the copper and iron works in Siberia*.

The art of mining, which, properly speaking, had taken its rise under Peter the great, was thus by the wise and unwearied exertions of that prince encouraged and advanced in all imaginable ways. In the year 1716, the emperor by a manifesto had given his subjects the first encouragement to mining. Three years afterwards he instituted the college of mines, and from that time no vayvode dared presume to meddle with mines. At the same time he found it necessary, “ as his empire “ was full of subterranean treasures, and these

* Schlotzer, from von Haven, p. 85—92.

“ rich sources of subsistence were hitherto neglected, partly from ignorance and partly from the insecurity of the possession,” to establish several remarkable privileges in the view of encouraging the search after ores and the working of mines. By an ukase of the year 1720 these privileges were extended to all foreigners without distinction. Other ordinances of similar purport enjoined, that persons who were searching for ores should have no impediments thrown in their way; that the woods about the works should be kept up, and that for the protection of the mines fortresses should be constructed on the frontiers*.

Such was the state of the russian mines when Peter the great quitted the stage on which he had laboured so much and with such great success. Russia now possessed both copper and iron in abundance; but the discovery of the rich gold and silver mines of Kolhyvan, which are since become a russian Potosi, was reserved for aftertimes. Akinfy Demidof, a wealthy individual and the father of the uralian mine-works, in 1725 received intelligence of the Tschudian mines in the mountains of Kolhyvan, and caused them to be visited by german miners whom he had at the former works. As here were found very rich veins of

* Schloetzer, from Tschulkof's istoritscheskoye opisaniye rossijskoi kommertzii, p. 115—117.

copper-ore, he raised some works in the year 1727 adjoining to the lake Kolhyvan. The number of his labourers was soon increased by people who had run away from the estates to which they belonged, whom he, by a special privilege, might admit and employ in his works; and a considerable number of the crown-boors were at the same time granted him. The first mines he began to work were copper, the ore of which, on an average had seven or eight per cent. of native cupriferos silver*.

In the reign of the empress Anna, the iron mines began to be of such consequence, that in order to gain the preference from the swedish iron the price of the russian was fixed at fifty-six kopecks the pood. The nertschinskian silver-mines discovered in 1704 were farther prosecuted, but at that time were not near so productive as afterwards. In the year 1739 the first gold-ore was discovered in the mountains of Olonetz, where the Voytzer-mine was opened, but afterwards abandoned. — Also there arose a report during this reign that the kolhyvan copper-ores contained silver; an assay was made in 1732, and the result of it proved so beneficial to the owner, that Demidof, as before, obtained the unlimited power of working it†.

* Herrman's statistische schild. p. 319. Compare with von Haven, in Schlœtzer, p. 95—101.

† Schlœtzer, from Tschulkof, p. 111. Herrmann's statist. schild. p. 317. 319. See also p. 112—114. 119—121. 127.

Under the empress Elizabeth the russian mines proved of greater importance almost every year. The works at Nertschinsk continued to be carried on with increasing success. From the time of their discovery till the year 1751 they had delivered in all 587 pood 7 pound and 54 solotniks of silver, from which the gold was not separated; in the year 1756 the spoils obtained from them suddenly rose, and in the single year 1759 they yielded near 1734 pood. The Voytzer gold-mines likewise in the mountains of Olonetz went on better. To these were added the gold-mines at Beresof in the mineral mountains of Ural, which had been opened ever since 1754, but only began to be of consequence in this reign; and lastly, the acquisition made by the crown of the mines of Kolhyvan, whence arose a silver age to Russia. On the first examination made in 1732 into the state of these mines, Demidof was indeed confirmed in the possession of them; but one of his climbers in 1743, thinking himself injured, absconded with a great quantity of rich minerals, and Demidof having good reason to fear that he would shew the silver-ore at St. Petersburg, resolved to make a virtue of necessity and produce it himself. The cabinet hereupon in 1745 sent thither a commission to take the mines, as at that time it was not lawful for a private person to hold gold and silver mines, into possession in behalf of the crown. In the year 1748 the working of silver was properly begun
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in the Schlangenberg, or serpentine mountains, and by degrees a number of mines and shafts were opened and worked, of which none however were so bountiful as the Schlangenberg*.

But the most brilliant æra of the russian mines was the reign of Catharine II. The improvement of the works undertaken from her first accession to the throne, the appointment of able and honest people, and the removal of numberless abuses and frauds gradually effected a production which excited the amazement of the world, and undoubtedly forms one of the most glorious and memorable events of her reign, and must immortalize that period to posterity. From a calculation founded on demonstrable facts, it appears that the value of all the mineral products obtained during that reign, not including the salt, in the first half of it may be estimated annually at ten, in the sequel at twelve, and at the time of her decease even at upwards of thirteen millions of rubles. Taking only the lowest sum on an average for the whole of that space, it will follow, that Russia, since the year 1763 has gained far above three hundred millions of rubles in value from her mines and salt-works. In proof of this assertion, the following summary view may serve, from which at the same time will be seen the present state of the russian mines.

* Schlœtzer, from Tschulkof, p. 130. Hermann's statist. schild. p. 318, 319.

Of the two proper GOLD-MINES belonging to the russian empire, that of BERESOF near Ekaterinenburg on the Ural is by far the most material. Here annually is obtained about 400,000 pood of ore, which on an average yields from every 1000 pood 40 to 60 solotniks of fine gold. To these mines belong three lavaderos on the Pyschma, on the rivulet Beresof, and Uktus, together having 861 troughs. The whole number of men employed in these works amounts to upwards of 2000, whereof about 1200 are in actual employ daily. No enrolled boors are any longer allowed to them.

The mines of Beresof have afforded annually three, four, five, or six, but in later years seven or eight pood of gold. From the commencement of the works here in the year 1754 till the year 1788, therefore in 34 years, generally about 120 pood has been gained, which in value is estimated at 1,198,000 rubles, and, after deducting the costs, have yielded above 480,000 net profit. If we take the gold and silver here obtained, as it proceeds from the separation, according to its standard in coinage; and balance it with the expences, which are paid in copper money, according to the true value of it, then a profit of near 800,000 rubles will appear.

The VOYTZER gold-mines in the mountains of Olonetz, which annually afford only a few (from 1744 to 1770, in general 57) pounds of gold, have

have, on account of the smallness of their produce, been some years since abandoned.

The most important SILVER-MINES are those of KOLHYVAN in the mineral mountains of Altay, which were undertaken by the crown in the year 1745. The main shaft is the Schlangenberg, one of the richest ever known in the world ; the Semeonofskoy in point of consequence holds the next station. Besides these two there are still others, of less importance, alternately or constantly worked ; and from a new shaft, Filipofskoy, on the Ulba, it is expected that the produce will in time equal that of the Schlangenberg. From all these mines together are at present annually obtained upwards of two million pood of ore, the contents whereof have of late years become poorer by one half. At first the pood of it contained five or six solotniks of auriferous silver, since only four, and latterly, especially since 1785, it contains not above two and a half. Here are five founderies, and the headquarters are at Barnaul. The workmen employed in 1786 were all together 54,000. The whole expenditure amounts yearly to 400,000 rubles, of which one half is paid in copper coined on the spot, the other half in bank-assignments.

From the year 1745, when the crown took these mines into possession, to the year 1787, therefore in 42 years, they have afforded 24,460 pood of fine silver, and above 830 pood of fine gold, which together amount in value to upwards of thirty millions

millions of rubles. The expences for this whole time, even including the charges of separation at St. Petersburg, come to not above seven millions; consequently here is a pure gain of 23 millions of rubles, which is very much increased if we estimate the copper coin, in which this expence is paid, at its real value, and consider, that even this is got and coined at the mines themselves.

The silver, or rather the auriferous and argenti-ferous lead-mines of NERTSCHINSK have been in constant work ever since their discovery in the year 1704, but with alternate success. Here, from the several shafts, more or less rich, are obtained annually about two million pood of ore, which however is very poor, and at present on an average scarcely contains a solotnik or one and a half in a pood. Here are five founderies, of which Staroi-Nertschinsk is the chief; which is also the head-quarters. The workmen are about 2000, and the boors inrolled to it for cutting of wood, about 13,000. The annual expences amount to about 200,000 rubles in copper coin and bank-assignments.

From 1704 to 1787, therefore in 81 years, these mines produced 11,644 pood of silver, from which since the year 1752 about 32 pood of gold has been separated. Both together amount in value to about ten millions of rubles.

According to the foregoing statements, therefore, in the interval between 1704 and 1788, at all

the gold and silver mines were gained about 1000 pood of gold and above 36,000 pood of silver, amounting together in value to upwards of 45 millions of rubles, and on which the expences were not more than fifteen millions of rubles.

The most important COPPER-MINES of the russian empire are principally in the uralian, altayan, and olonetzian mountains. The URALIAN mineral mountains, which contain by far the richest mines, and to which belong all the copper-works in the governments of Perme, Ufa, Viætka, and Kazan, had in the year 1779 in all 60 founderies, together containing 229 furnaces, and at which in 1782 above 190,752 pood of copper were obtained. — In the ALTAYAN mountains is likewise a considerable copper-mine; besides, there arises from the cupriferous silver-ore a tolerable quantity of copper: at present in all annually about 15,000 pood. In the year 1782 here were coined 18,793 pood of copper. — The spoil got from the OLONETZIAN mountains, and the other separate copper-works cannot be computed at more than a few hundred poods.

The entire annual amount of the copper obtained is therefore about 200,000 pood, the value whereof in money, reckoning the pood only at ten rubles, makes a sum of two millions of rubles. As for some years past the extraction of the copper has greatly declined, we can in fact at present scarcely admit more than 200,000 pood as the certain

tain yearly total; and the price of that metal has accordingly risen.

The IRON-MINES form the greatest of all Russia's mineral wealth, after the salt-works. It is known to all the world, that this empire has in all its mineral mountains, and even in many of its plains, a prodigious quantity of iron-ore of all the known sorts; but the most numerous and the richest mines are in the URALIAN mountains, where in the year 1779 were generally at work 70 forges and 532 large hammers. There are, besides, two smelting-houses in the altayan and sayane mountains, and several in the governments of Olonetz, Vologda, Nishnei-Novgorod, Kostroma, Kursk, Tula, Tambof, &c. Without being liable to much mistake, we may at present admit for the whole empire, about 100 forges and 800 hammers; but besides the iron-works that are carried on in the gross, there are a great number of boor-smiths who smelt the ore at home, and of the iron make various kinds of utensils. Such little smithies are particularly in the governments of Olonetz and Archangel, in some regions of the Volga, and in Siberia near Krasnoyarsk, Yenisseisk, &c.

In the year 1782 were obtained at the uralian iron-works of the governments of Perme, Ufa, and Viætka 3,940,400 pood of wrought iron; now, as we may allow for all the other russian and siberian governments at least a million of pood, then in the whole empire about five million pood of iron.

iron (the various cast-wares not included) are annually produced: a quantity which in specie according to the present prices, amounts at least to four millions and a half of rubles. The generality of the iron-ores yield about fifty per cent. raw iron, but some less. For obtaining five million pood of wrought iron, requires, according to the manipulation here in practice, $7\frac{1}{2}$ to 8 million pood of raw iron, and for the acquisition of this material at least 15 million pood of iron-ore.

The POLITICAL AND ÆCONOMICAL CONSTITUTION of the mines underwent a thorough change during the late reign; as the empress in pursuance of the great plan she had formed of new-modelling her empire, reduced also this department of the public administration by several ordinances and precepts to a well-combined system. Not only was the management of the mines greatly simplified, but likewise the privileges formerly granted to miners were confirmed and enlarged by many important concessions, even at the expence of several imperialties and prerogatives of the crown.

By the present constitution, the mines belong either to the CROWN, or to public institutions, or to private individuals. The first possesses all the before-mentioned gold and silver mines; the share, which it has in the copper and iron mines, cannot be accurately ascertained, though it appears from authentic statements to be about one sixth of the former, and of the latter one eighth part.

All

All mines were formerly under the superintendence of the mine-college, as before related: that college came to an end the 1st of May 1784*, and the crown-mines now belong either to the cabinet or to the senate.

Under the direction of the CABINET are all the gold and silver mines of Kolhyvan and Nertschinsk. — The rest of the crown-mines are dependent on the SENATE. They are managed by directors and overseers who deliver their accounts to the finance-office of the government, and thence receive their orders†. — Besides these offices there is also a kantora at St. Petersburg for the separation of the gold from the silver, over which the general-procureur has the inspection.

The only public institution, hitherto in possession of mines is the IMPERIAL ASSIGNATION-BANK, which some years ago purchased the copper and iron works in the government of Perme of the proprietors Pochadyæschin. For the conducting of them there is an office at the bank, and a direction settled at the works.

The PRIVATE MINES received in the late reign so many and such diverse grants by law, that it would not be easy to point out a country which can shew in this respect similar privileges and immunities. According to the former constitution, the RIGHT OF WORKING MINES properly be-

* Ukase, bearing date Jan. 27, 1783.

† Idem.

longed

longed only to those who had the right to possess land; a privilege, it is well known, enjoyed only in Russia by the nobility. — The ordinances of Catharine II. grant the right of opening mines and erecting works at them, 1. to all owners of land; particularly, 2. to the nobility; and, 3. likewise to the therein-named burghers, and the burghers of the first and second guilds*. Yet from the commencement of mining there have been un noble proprietors of mines, who belonged to the class of merchants. But their mines are either in crown-lands, or in the country of the Tartars, Bashkirs, Vogules, and other Siberian nations, and in the former case the forests are given them only to cut, (for a stipulated time or for ever,) with the permission to work the mines, but the fee-simple of the land was not made over to them. By the ordinance of Peter the great the freeholders were obliged to pay $\frac{1}{2}$ of the net profit, which tribute by an edict of the empress Anna was fixed at 2 per cent. on all the ore obtained. Catharine the second abolished this impost entirely on all the works erected on crown lands†. Likewise un noble mine-owners might not buy vassals for workmen, though it formerly had been allowed by another ordinance to purchase vassals for manufacto-

* Ukase of 28 June, 1782. Ordinance respecting the nobility, § xxviii. xxxii. Ordinance for the municipalities, § cv. exi. cxxxvi.

† Ukase of May 10, 1767.

ries and workshops, wherefore many proprietors of mines had them at their works. It was the same with the mine-works of the nobles which lay on such lands, only with this exception, that they had the right to keep vassals.

As to the RIGHT OF PROPERTY in mines, all the privileges granted in the preceding reigns were not only fully confirmed, but also in many respects considerably enlarged*. By this regulation the right of property was extended to ALL products and minerals concealed in the earth, and even GOLD and SILVER were specifically by name secured to the undertakers, only subject to a tribute of the tenth. It is, however, surprising, that since that time nobody has begun to work gold and silver mines, and that in Russia (except a certain Sibiriakof, in the nertschinskian mineral mountains; but they were granted to him prior to the said ordinance) no private person is in possession of any such, though it is certain that there is rich ore of these metals, and known to the owners of certain works†.

The TRIBUTES or taxes attached to private-mines are the following: of the GOLD and SILVER, if any such be gotten, the tenth part. — Of the COPPER, i. the tenth part of the rose-

* By the ukase of the year 1782.

† Herrmann's beschreib. des uralischen erzgebirges, tom. ii. p. 239.

copper* in natura. The tenth originates, as we have seen, from the edicts of Peter the great. By an ukase of the 7th of August 1762 it was commanded, that it be no otherwise levied than in natura; and in virtue of an ukase of the 23d of June 1794, all private copper-works that are erected with the assistance of the crown-caisse, or have received of the crown lands, forest, or boors, over and above that tenth, ten pound from every hundred — but all the rest, erected without this assistance, pay still five pood more. The former therefore pay 20, and the latter 15 per cent of the copper they obtain to the crown. 2. Of the remaining copper, after deducting the tenths, (now the 15th or the 20th,) one half must be delivered to the crown at 5½ rubles. Formerly two thirds were subject to this sale, which is of the nature of a tax. Catharine the second, by the ukase of June 28, 1780, lowered this legal delivery to the half, and in the manifesto for instituting the imperial lombard, all private proprietors of works in being or to be erected, who obtained a greater quantity than they had hitherto done, are entirely discharged from this obligation. The other half may be freely sold or shipped outwards on paying certain stated low duties. The crown itself at present pays for the pood of copper, when brought by voluntary contract, ten rubles. 3. On

* By the Germans called garkupfer.

every furnace for smelting copper was paid a tax of five rubles per annum ; but by the said ukase of June 23, 1794, this tax is doubled, accordingly each pays now 10 rubles. — Of the IRON: 1. Instead of the tenths, on each pood of raw iron was paid 4 kopeeks. Since the 23d of June 1794, all iron-works erected with the assistance of the crown pay another 4 kopeeks, and those without that assistance 2 kopeeks ; the former pay now therefore for every pood of raw iron 8, the latter 6 kopeeks. 2. For every forge the owner pays the crown yearly 200 rubles. Till the 23d of June 1794 only 100 rubles ; at that time this tax was doubled. 3. The duty on exportation on every berkovetch (10 pood) of bar-iron is 37 kopeeks. — The former obligation on every private proprietor to deliver iron and warlike stores to the admiralty and artillery at a price fixed in the years 1715 and 1728, was abolished in the year 1779, and all other metals and minerals are entirely free from taxes.

Considerable as these taxes are, yet the PROFITS arising from mining are very great, whereby numbers of proprietors have risen from a very low condition to extremely great wealth. In the uralian mountains, for instance, the ordinary bar-iron at most of the private works is below 40, at many of them between 40 and 50, and only at very few above 50 kopeeks. In short, copper and iron mines are so profitable, that every attention is paid to procuring the metals, and the manufacturing them

them is entirely neglected. — Of the iron, indeed, a considerable quantity is disposed of in the country, but by far the greater part is sent abroad, and to that end conveyed to St. Petersburg, which, even from the Ural, notwithstanding the great distance, is done throughout by water. The expence of this transport, which is greatly favoured by the rivers and lakes of the uralian territory, from the works to the residence, comes to, for the greater part, 15 to 20, for some above 20, for a very small proportion as far as 25 kopeeks. With the majority of the uralian iron-works, therefore, the pood of iron, quite to the delivery of it at St. Petersburg, comes only to 55, or at most to 60 kopeeks; but the sale-price has of late years been 110 to 120 kopeeks. — The remainder of the copper for sale is mostly disposed of at Mosco, Makarief, and St. Petersburg, and generally consumed in the country. The market-price of this metal was formerly, even at Ekatarinenburg, nine rubles the pood; it afterwards fell somewhat, but at present, on the export of it being allowed, is risen again.

It has been already said, that the private owners of mines are mostly nobles, but partly are likewise burghers and merchants. The richest copper-mines belong at present, since the family Pochadyæschin sold theirs to the bank, to the families Turtſchaninof, Lughinin, Stroganof, &c. and the largest iron-works to the families Demidof, Yakovlef, Stroganof, Tverdiſchef, Lazaref, Lughinin, and Bataſchef. The family Stroganof possesses in

the government of Perme alone 540,000 square versts of land, and had on it at the revision before the last 83,453 vassals of the male sex. Of the private works and villages there are many, which, in magnitude, in neatness of buildings, and in the number of their inhabitants, exceed most of the towns of this government *.

In the MANAGEMENT of the private mine-works, in pursuance of the aforesaid ordinance of June 28, 1782, no finance-office, nor any court of judicature, is allowed to intermeddle; but the regulation and conduct of the works are left entirely to the proprietor, who generally trusts the management of them to a prikaschtschik or clerk with full powers, for which office some clever fellow is chosen from their vassals, who understands the great arts of reading, writing, and casting accounts: many purposely choose persons of the old faith, a sort of sectaries, called by the orthodox raskolniki or heretics †, as they are not (so much) addicted to drunkenness, and spy out the faults of the orthodox with Argus-eyes. One of these men, for a salary of forty to a hundred rubles, with some domestic advantages, superintends mines and founderies, frequently lying very distant asunder, conducts the business of the compting-house, the accounts of which are very intricate, and has the

* Beschreibung der statthaltersch. Perme, in Hermann's beyträgen, tom. iii. p. 55.

† For some account of these people see the life of Catharine II. vol. ii. p. 196, 4th edit.

direction

direction of some thousand vassals and free workmen, looks after the miners and the smelters, carries on law-suits concerning bounds and mines, provides for the taxes due to the crown, procures the cheapest possible transport, and makes his master rich. Though at some private works likewise free people, such as merchants or dismissed officers, are employed in this service, yet it is with the generality only a vassal prikaschtschik, who, with a few assistants, directs large concerns of this nature, the products whereof, as with those of Demidof and Yakovlef, amount to half a million of money, and for the management of which in other countries a whole board of commissioners, with counsellors, assessors, and secretaries, would be appointed*.

The works at the mines of the crown as well as at those belonging to private persons are partly carried on by master-workmen, partly by inrolled boors, partly by vassals, and lastly also by free workmen. The class of master workmen has sprung from the crown-boors and the people designed for recruits, which have been assigned to the works at the mines. They belong, with their whole posterity for ever, to the works, whether belonging to the crown or to private owners, to which they are inrolled, and are entirely maintained at the expence of the crown or the proprietor of the works. For describing somewhat more distinctly

* Herrmann's beschreibung des uralisch. erzgeb. tom. ii, p. 228.

the fate and performances of this class of men, we will borrow a few particulars from the account which Renovantz* has given of those at the kolhyvan mines.

The workmen in the mines and the founderies are indeed all called master-people, but they distinguish themselves into masters, under-masters, apprentices, delvers, servants, carriers, washers, and separators. In proportion to their ability their wages are regulated, which proceed from 15 to upwards of 30 rubles per annum. The provisions which they receive from the magazines are deducted from this pay.

The number of the master-people belonging to the kolhyvan establishment is 4186 men, but of whom a great part must be deducted for superannuated and incapable, for patients and attendants at the hospitals, for overseers of the mines and kantoras, for denfschtschiki to the officers, &c. and are annually diminished by considerable desertions. From the remainder are taken all the people wanted for the several collateral employments about the works, so that for the proper purpose of mining a number is left proportionately but small; at the Schlangerberg, for instance, not amounting to more than about 600 men. — The children of the workmen and soldiers, to the number of 1029, are partly instructed in the schools, or if they be grown up,

* Nachrichten von den altaischen gebirgen, p. 174.

put to the laboratories. The increase of the workmen is according to the recruitings; but as all these works in the mines and at the founderies are prejudicial to the health and shorten life, the deficiencies are seldom in this way supplied. The real increase is made by the children of the labourers, of whom a boy of fourteen will do more than a full-grown fellow from the boors. — The constitution, the treatment, and the punishments of the people belonging to the mines are almost entirely military. They advance in rank like the subaltern officers in the army; their offences are tried by military law, at which when necessary even mine-officers are present.

As in the Altay there are neither markets for provisions nor tradesmen and mechanics; the workman at the mines must provide himself all his necessaries; and here the numerous court and church holidays stand him in good stead, on which he is freed from all public labour. His first care is to have a small house of his own, to which he lays out a garden and keeps a cow-yard to secure him a maintenance. If new shafts are opened in several places, at first he makes shift for some time with a hovel composed of a few stakes, and covered with fods, or he digs himself a habitation and a baking-oven in the earth. As soon as the works afford some prospect of success, he builds himself a regular house on the spot, whither he takes with him his cattle and his little property. Thus it not

unfrequently happens, that in the thickest and most inaccessible forests, or in wild and dreary steppes, in a few years whole streets and villages arise. If, after trial, the projected works be abandoned, the labourer loses nothing, as he easily sells his house to a countryman, who sets it in another place, sometimes twenty or thirty versts distant.

The people of the altayan mines and founderies, particularly such as are born of them, are dexterous and clever, and fit for any thing. Many of them, without any tuition, very soon and successfully apply to arts and mechanics. There are boys among them who copy the finest drawings; common smiths make large clocks which strike the hours; and wherever any opportunity presents itself of earning a small matter, the spirit of industry is immediately roused, which their hard and toilsome destiny seems rather to unfold than to suppress. Almost every miner of the Altay is moreover an excellent hunter, an expert horseman, and in case of necessity certainly the best soldier.

Something remains to be said of the BOORS ENROLLED TO THE WORKS, whom we have had so frequent occasion to mention. The first and the generality of the mines were originally opened on crown lands, and—excepting the crown—mostly by persons not belonging to the nobility, and consequently not capable of possessing vassals. In order therefore to remedy this want of workmen, which was at that time the more urgent as at first no free
workmen

workmen were to be had for money, and in order to raise the art of mining, the sovereign ordained that the crown-boors in the neighbourhood of the works should work at them for their head-money, which the owners were obliged to pay in their stead. Most of the private undertakings that had such boors in their environs, obtained therefore a sufficient number of workmen, who, till the year 1779, might be employed at all the works, and at every season of the year.

The indeterminate manner in which this grant was made gave rise to a two-fold abuse. The proprietors not only made very free use of the privilege to the detriment of the crown, of enrolling the boors, but such continued and hard labours were arbitrarily exacted of these poor people, that they were at times even driven by desperation to rebel against their tyrannical masters. When Catharine the second ascended the throne, she immediately adopted measures for checking this flagrant misdemeanor. In the year 1766 she appointed a commission, composed of the chief officers of state, to examine into the matter and to lay before her their proposals for an alteration; but, as there was no hope of a termination to this weighty concern, it being delayed by every kind of difficulty that could be thrown in the way, the empress issued some special precepts from her own hand, whereby the grossest of the abuses were remedied for the present, till at last the laudable ordinance of the

23^d of May 1779, appeared, by which the fate of the enrolled boors was fixed on a humane and equitable footing. Not only their wages were raised, but also the time ascertained when and how long they should work, and the nature of their work was accurately stated with penalties annexed. These boors are therefore now obliged only to do five kinds of business, whereby every man must yearly earn 170 kopeeks, according to the stated price for each day's work, to which at most four weeks were requisite in the whole year, and with which therefore he had time enough remaining for managing his husbandry and his domestic concerns.

Where the nobleman has mines on his own ground he must carry on all the works by his **VASSALS**; but if his works be on land not his own, he may, together with these, employ the boors assigned him. — The **VOLUNTARY** workmen generally compose the least proportion; and, if the works depended on these alone, they would soon grow cold. Yet at many of the copper and iron-works in the Ural the greater part of the ore is brought out by hired carters, because the enrolled boors can earn their head-money simply by cutting wood and carrying charcoal. — As in the neighbourhood of these mines all the crown-boors already belong in one way or another to the works, so it is now almost impossible for any one who does not possess vassals, to prosecute mining with advantage, as it is in most places extremely difficult,

cult, even for the best wages, to get a sufficient number of voluntary and good workmen; and because on the other hand a large capital is wanted, which is seldom within the compass of one individual. These may probably be the reasons, that since the manifesto of the year 1782, by which the privileges of the miners were so secured and enlarged not one new mine adventure has appeared*.

As we have endeavoured to give an account of the russian mines only in a statistical regard, it is beyond the limits of our plan to describe the manipulation, the smelting-process, or in general the technological operations of them; which moreover would be very uninteresting to the generality of readers. We shall therefore conclude this head with some general political remarks on the most remarkable products of the mineral kingdom, so far as they, not merely exist, but also are sought out and employed, at the same time endeavouring to state the value of their annual produce, and the export and import of them.

Of GOLD, as has been shewn, Russia obtains annually about 40, and of SILVER near 1300 pood, which, according to the prices of the year 1789, of both amounts to the value of 1,729,000 rubles. These metals are brought to St. Petersburg and there mostly coined, having been previ-

* Hermann's beschreibung des uralischen erzgebirges, tom. ii. p. 237—239.

ously separated at the imperial office for that purpose, and brought to the perfect standard. — Besides the gold and silver got from the mines, Russia obtains annually a very considerable quantity of these noble metals by the overbalance of her commerce, as also from the duties which in part must be paid in foreign coin*.

Of COPPER is annually gained about 200,000 pood, the value of which must be estimated at least at two millions of rubles. The copper which the crown receives as well from its mines as by the taxes from private proprietors, is all coined. The export of this metal is inconsiderable (in the year 1793 it amounted, from all the seaports of the empire only to 187 pood, the value of which was returned to the custom-house at 2910 rubles); nay, Russia even buys copper wares and verdigris†.

So much the more important as an article of

* According to Tschulkof's statements, gold and silver in specie, either in foreign monies, or uncoined, were imported, in eleven years, from

	Rubles.
1758 to 1768	19,219,566
1773	1,256,406
1774	1,082,533
1775	1,805,395
1777	1,822,749

therefore annually just as much as was obtained from the mines.

† Of both, for instance, in the year 1793 were imported at St. Petersburg to the value of above 42,000 rubles. In the year 1768 Russia sold to the amount of 53,000 rubles in copper.

foreign

foreign commerce is the IRON, of which annually about five millions of pood are obtained ; the value of which in money, however, on account of the continual rising of the price, cannot be accurately ascertained. Besides the prodigious quantity consumed in the empire itself, where, as may easily be imagined, it is used without much regard to frugality, Russia exports every year so great a quantity of this metal, that, next to hemp, it forms the most important article of exportation. In the year 1793 this export in bar and sort-iron, as well as in cast-iron goods, amounted to 3,033,249 pood, or in value of money as given in the custom-house books, 5,204,125 rubles *.

LEAD is found in all the mines, particularly in those of Nertschinsk and the Altay ; though but little attention has hitherto been paid to the getting of this useful metal : consequently Russia for the most part fetches what she wants of it from the foreigner. Of the galena got at the nertschinskian mines about 30,000 pood is annually revived to lead, which is mostly sent off to Barnaul ; of the remaining galena millions of poods are left to lie unused. Some methods, however, are at present adopted for smelting a considerable quantity

* Notwithstanding this great wealth in iron, Russia buys annually a considerable quantity of this wrought metal. In the forementioned year were imported at St. Petersburg, in various sorts of vessels and utensils, lackered iron ware, tin plates, plates, scythes, &c. to the value of 196,000 rubles whereof 101,000 rubles was for the article of scythes alone.

of it to lead, and to deliver it at St. Petersburg for general use. In the year 1793 the importation of lead at that port was 36,000 pood, which, according to the custom-house registers, was in value 125,000 rubles. — TIN has as yet been nowhere discovered: in the year 1793 to the amount of 167,000 rubles were imported of it at St. Petersburg.

The SEMI-METALS have not in general been at all produced. Arsenical calx is found indeed in all the mineral mountains of Russia, but in no considerable quantity. Antimony is pretty plentiful in the nertschinskian mines, and zinc-ore both in them and the altayan. Quicksilver has been hitherto discovered only in two places, in the nertschinskian mountains and towards Okhotsk. Nickel, cobalt, and bismuth, are likewise but sparingly found in the said mountains. — Of all these friable metals Russia annually purchases greater or less quantities. The most considerable importation is that of zinc and quicksilver. The former in 1793 amounted at St. Petersburg alone to 230,000, and the latter, including the zinner, to 44,000 rubles.

In noble, precious, and durable KINDS OF STONE, either subservient to the fine arts, or used as building materials, for the decoration of houses and for public monuments, Russia likewise has very valuable stores. Porphyry, jasper, agate, chalcedony, carnelian, onyx, mountain crystal, beryl, garnet, lapis lazuli, alabaster, in extraordinary quantities, in the greatest varieties, and of the most

most variegated kinds and colours. Also marble in abundance; the finest white, equal to the parian and the karrara, is found in the uralian quarries. There is also yellow, grey, and cloudy: most of the marble now worked in St. Petersburg in such enormous masses and quantities, comes from the governments of Vyborg and Olonetz. There too, as well as in most of the other mountains, is found granite, from the finest to the coarsest granulation, and is much employed as an excellent material for building. For the use of the glass-houses and porcelain manufactories there is almost every where QUARTZ enough. Most of the ARGILLACEOUS EARTHS, necessary in the manufactories, Russia possesses in great quantities; but they are scarcely anywhere got out. TURF and COALS are found in some parts, and in several districts might supply the want of firewood. SULPHUR is in sufficient abundance for rendering the importation of it unnecessary. Of SALTS the empire contains inestimable stores. Without reckoning the culinary salt, which we are on the point of mentioning circumstantially, GLAUBER and BITTER SALTS, ALLUM, SAL AMMONIAC, VITRIOL, SALTPETRE, NATRON are found partly in exceeding great quantities. Of curious PETRIFICATIONS and MINERAL WATERS, neither is Russia in any want*. Not-

* Brunnich's mineralogy, with Georgi's additions. Falk's beytræge, tom. ii. Hermann's statist. schilder. p. 181—217. Guldenstedt's akadem. rede, &c. 101—118.

withstanding

withstanding this extraordinary wealth in mineral productions of all kinds, the import of them however forms a very considerable head in the list of public expenditure; and though the mineral treasures of Russia are not by far sufficiently known and explored, it is certain that of such as are known much the greater part are only employed in a very imperfect manner.

This is manifest from the prodigious importation of mineral articles, which mostly subsist in the empire even in abundance. In the year 1793 the following articles were brought into the port of St. Petersburg: allum, sal ammoniac, vitriol, salt-petre, sulphur, precious stones, agate, crystal, topaz, fieldstones, millstones, whetstones, and grindstones, alabaster, gypsum, tripoli, emery, porcelain, stoneware of clay and earth, crucibles and matrices, tiles and pantiles, flints, coals, mineral-waters, and minerals — to the value of 340,000 rubles. In which the numerous glass-wares and other articles are not included: the value of precious stones imported cannot be ascertained, as they are duty-free.

SECTION XI.

Salt-works.

SALT, as every one knows, is become so general and indispensable a necessary with most of the nations of the earth, as to form at present one of the weightiest

weightiest objects of political œconomy. The demands for it are the more urgent and great in a country in proportion as the population and the practice of husbandry increase, the more the salt-springs, salt-lakes, and layers of rock-salt are exhausted, the scarcer the wood and other materials for firing become, and as the imported foreign salt rises in price. Thus in Russia, which annually consumes twelve millions of poods of salt, and where the increase of the population keeps equal pace with the dissemination of useful trades and with the improvement of agriculture, the obtaining of this mineral is an extremely important object of public concern, though that operation here be so liberally encouraged by nature. This country is so happy as to possess within its circumference such a number of rich and productive salt-works, that its inhabitants are at present able to supply themselves sufficiently, and at a price so low as is unexampled in other countries. The salt is got here partly from salt-mines, partly from salt-lakes where it crystallizes spontaneously, and partly from salt-springs, by evaporating the brine by boiling.

The richest couches of ROCK-SALT within the russian territory are about the Ilek in the district of Ufa, on the Volga in the government of Caucasus, and on the Vilui in the government of Irkutsk; but as yet only the salt of the Ilek has been broken. In the neighbourhood of the russian borders, as in Caucasus and in the kirghisian steppe

much rock-salt is likewise found. The salt mine of the Ilek lies sixty versts from Orenburg. From 1765 to 1787, (exclusive of the year 1775, because in it none was dug on account of the disturbances there,) therefore in 22 years, 9,770,794 pood were obtained from it: namely, from 1765 to 1774, in ten years, 2,901,694 pood; from 1776 to 1781, six years, 1,987,457 pood; and from 1782 to 1787, six years, 4,881,643 pood.

The russian empire, farther, comprehends a great number of rich SALT-LAKES, where the culinary salt crystallizes of itself without the assistance of art, forms a thick crust, and is only broken away*.

This lake-salt† is, however, never entirely pure, but has always a mixture of bitter salt, natron, or

* The crystals of common salt are right-angled six-sided solids, and are usually said to be cubes. These form at the surface, where the evaporation is the greatest; and they float by virtue of the repulsive power of their dry upper surfaces, which displaces a quantity of the surrounding water: a circumstance common to all such small bodies as are not easily wetted. When the crystal becomes too large to be suspended in this way it sinks. If two floating crystals come so near each other as that the hollow spaces may communicate, they fall together into one cavity at the surface, without sinking, and the successive apposition of other crystals often produces a curious hollow pyramid, which is square, because the figure of the crystals themselves occasions them to apply to each other only in the position required to produce such a solid. Nicholson's first principles of chemistry, p. 172.

† In russ, busun.

... earthy

earthy common salt. Among the largest and most productive salt-lakes are: the Elton, in the government of Saratof, the salt-lakes near Astrakhan, particularly the iuderskian, and the salt-lakes in the government of Kolhyvan. The Elton produced only in the six years from 1782 to 1787, 33,549,939 pood, therefore yearly on an average above 5½ millions of poods. — The salt-lakes of Astrakhan yielded from 1765 to 1774, in ten years, 6,766,097 pood. The iuderskian salt-lake is granted to the uralian kozaks for their free use; therefore the quantity it yields cannot be accurately ascertained. — From the kolhyvanian lakes, from 1777 to 1786, in ten years, 4,856,312 pood were obtained. — Among the other salt-lakes, the tauridan, caucasean, and irkutskian, are particularly productive. The first yield annually about three millions of poods.

The bay-salt is either boiled from the brine of salt-springs or from sea-water*. The most numerous

* The whole art of extracting salt from waters which contain it, consists in evaporating the water in the cheapest and most convenient manner. In England, a brine composed of sea-water, with the addition of rock-salt, is evaporated in large shallow iron boilers; and the crystals of salt are taken out in baskets. In Russia, and probably in other northern countries, the sea-water is exposed to freeze; and the ice, which is almost entirely fresh, being taken out, the remaining brine is much stronger, and is evaporated by boiling. In the southern parts of Europe the salt makers take advantage

merous and most productive SALT-SPRINGS are on the Kama in the district of Solikamsk, on the Lovat near Staraya-Rossa, on the Donetz near Bachmut and Tor, on the Volga near Totma and Balachna, in Taurida and on the isle of Taman,

of spontaneous evaporation. A flat piece of ground near the sea is chosen, and banked round, to prevent its being overflowed at high water. The space within the banks is divided by low walls into several compartments, which successively communicate with each other. At flood tide the first of these is filled with sea-water; which, by remaining a certain time, deposits its impurities, and loses part of its aqueous fluid. The residue is then suffered to run into the next compartment; and the former is again filled as before. From the second compartment, after a due time, the water is transferred into a third, which is lined with clay, well rammed, and levelled. At this period the evaporation is usually brought to that degree, that a crust of salt is formed on the surface of the water, which the workmen break, and it immediately falls to the bottom. They continue to do this until the quantity is sufficient to be raked out and dried in heaps. This is called bay salt. — In some parts of France, and also on the coasts of China, they wash the dried sands of the sea with a small proportion of water, and evaporate this brine in leaden boilers. — At several places in Germany, and at Montmarot in France, the waters of salt-springs are pumped up to a large reservoir, at the top of a building or shed; from which it drops or trickles through small apertures upon boards covered with brush-wood. The large surface of the water thus exposed to the air, causes a very considerable evaporation; and the brine is afterwards conveyed to the boilers for the perfect separation of the salt. Nicholson's first principles of chemistry, p. 170, & seq. 2d edit:

on

on the Dvina near Ustiug, on the Angara near Irkutsk, and in other places. The most important falterns are those in the district of Solikamsk in the government of Perme. These from 1765 to 1774 yielded 25,897,815, and in the years 1784 and 1785, 11,361,477, therefore annually above 5½ millions of pood of salt; which reckoning by the market price the pood at 35 kopeeks, produces a value of nearly two millions of rubles. The permian salt-works belong in part to the crown, but mostly to private owners, and principally to the family Stroganof; in the years 1784 and 1785 the produce from the crown salt-works was 2,746,320, and that from the private falterns 8,615,157 pood. The brine here, which unprepared contains from 10 to 16 solotniks of salt in the pound, is boiled just as it comes from the spring, without any kind of preparation whatever; some few works excepted, in which of late years several improvements have been made. The keeping of a pan, which on an average produces from 40 to 50,000 pood of salt, costs at the crown-falterns, yearly, with all requisites, including the salaries of the officers, 2915 rubles 39½ kopeeks; thus, the pood of salt stands the crown in 5½ to 6 kopeeks. The permian salt is transported into twelve different governments of the empire, and to this end put on board large flat-bottomed vessels, which, without having a single iron nail to hold them together, are able to convey from 40

to 90,000 pood of salt*. These vessels go down the Kama as far as Laifchova, and then up the Volga to Nishnei-Novgorod, where the principal deposit is kept, and whence it is farther conveyed partly by land and partly by water†.

The salt-works at Staraya-Rossa in the government of Novgorod, from 1777 to 1787, in eleven years, produced 1,526,778 pood. The constitution of them was uncommonly improved by the

* The expences attending all the permian salt-works belonging to the crown, are, at present, for

Wood - - - - -	about	27,720 rubles.
Materials, implements, horses - -		16,000
Salaries and wages - - - - -		13,900
Construction of the transport vessels, with all necessaries - - - - -		31,442
Cost of the transport - - - - -		53,658

Total 142,720

It is reckoned, upon an average, that at present a pood of salt costs the crown on the spot $5\frac{1}{4}$ and at Nishnei-Novgorod 11 kopecks. The profit which the crown, after deducting all expences, makes on an average, may amount on its own salt to about 15, and on the salt of private owners to about 4 kopecks on the pood. By this calculation the crown in the years 1784 and 1785, taken together gained from the permian salt-works,

On its own salt - - - - -	311,948 rubles.
On the salt of private owners -	344,606

Total 656,554

† Herrmann's beschreibung des uralischen erzgebirges, tom. ii. p. 143—224.

late

late lieutenant-general Baur, in pursuance of the advice of M. Cancrin, who was afterwards made director of those works. The brine here springs from various marshes, is mostly only one ounce and a quarter, and is graduated to eight ounces. This evaporation house or gradir-work, as it is here called, was lately the only one in all Russia; but these improvements have already given rise to some beneficial alterations at the permian salt-works. The ovens and seething-houses are also constructed in the manner practised in most parts of Germany*.

The other salterns in the governments of Vologda, Kostroma, Viætka, Nishnei-Novgorod, Irkutsk, &c. likewise produce annually a considerable quantity of salt. — SEA-SALT is indeed found in all the seas that surround the Russian empire (the Caspian excepted, which is barely brackish); but only near Archangel and Kamtschatka is the sea-water boiled to this purpose. The salt-works of Archangel produced yearly about 150 to 200,000 pood.

From 1765 to 1777, by an account delivered under imperial authority, from the magazines of the crown alone 81,046,370 pood $37\frac{1}{2}$ pound of salt were sold yearly, therefore on an average, above 8 millions of pood. As since the last-men-

* Herrmann's beschreibung des uralischen erzgebirges, tom. ii. p. 199.

tioned year the consumption has very much risen several new salt-works have been set up and others enlarged, and as the krimean and the nderfkian salt are not included in the above statement, we may fairly admit at least twelve millions of pood as the annual product and consumption in the empire. The pood of salt is everywhere sold at a stated moderate price of 35 kopeeks; consequently, this mineral forms an object of 4,260,000 rubles, of which however the net profit to the crown is at most only two millions.

Notwithstanding the great store of salt possessed by the russian empire in its inexhaustible salt-mines, lakes, and springs, the quantity hitherto obtained is not sufficient for the supply of all the provinces, therefore foreign salt to a very considerable amount is brought every year into the livonian and finnish harbours; an import, which according to Guldenstädt's statement in the year 1768, came to 492,000 rubles. On the other hand the tauridan ports shipped off in the year 1793 to the value of 23,000 rubles in krimean salt. So considerable an over-balance of the import, and the daily increasing demands, put it beyond all doubt, that the best management possible of the salt-works in being and the employment of the salt places as yet unoccupied, is one of the most important concerns of the internal œconomy of the empire. How much in this respect, notwithstanding the present improved manage-

management and the alterations that have been here and there introduced in the method of procuring the salt, still remains to be done and to be desired, is apparent even from the foregoing contracted representation. Many excellent salt sources remain untouched in southern Russia, because wood, in the districts where they are, is scarce, and because by a continual employment of the salt-pans, they would reasonably apprehend a total deficiency. This evil might indeed ensue if we are to expect that all things will proceed as they have hitherto done; but if the forests were carefully managed according to the rules of art, if coals or sedge were to be used instead of wood, if furnaces were to be built in the cottages of the workman, which would be fitter for keeping up and invigorating the fire, if the brine were not to be boiled as it comes out of the springs, but in the evaporating-houses previously deprived of a part of the water, if this were done, certainly the want of wood in these parts would be no obstacle. The great advantage of the evaporating-houses is already confirmed in Staraya-Rossa, by the most striking experience, at those works where they are erected by imperial command: these salt-works now annually produce 100 to 150,000 pood, where formerly scarcely 10,000 were extracted. This example, and perhaps likewise the adequate and luminous proposals of the academician Lepekin in the second part of his travels, have indeed raised

raised a spirit of emulation among the proprietors of the permian salterns, which has hitherto been productive of several improvements; but at most of the other salt-works the better processes formed upon the rules of art are not yet even known by name. In the southern regions the effect of the evaporation would be beyond comparison greater, as the air is here drier, the heat more intense, and the frosts in winter so slight that the evaporation would ever proceed in an uninterrupted course. It would here even be possible to obtain the spring-salt entirely without wood and without fire, if the brine, after the evaporation, were to be exposed to the sun and the wind in large open reservoirs, as is done with the salt-waters on the coasts of France. Even the cold, which in the northern provinces prevents the evaporation in winter, may serve to free the brine from a great part of the water if it were left to freeze in broad shallow vats placed in the open air.

Among the large quantities of rock-salt which have hitherto lain unbroken, at least were so some few years since, is particularly to be remarked a mine in the steppe between the Volga and the Ural, which the Kalmuks call Tschaptschatschi, and from which may be easily got as much salt as from the iletzkian mines, if the Kalmuks could be induced to conduct the transport from the spot itself to the Volga with camels. This road is very short and richly provided with pastures
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and water; but the conveyance of it on carriages would be extremely difficult on account of the deep sands. The perfectly clean rock-salt yielded by the Tschaptschatschi is far better adapted to the salting of fish and kaviar than the salt of the lakes about Astrakhan, which in a short time corrupts these commodities. — Among the salt-lakes, on which the salt shoots into crystals by the heat of the sun, and which lie chiefly near the Volga in the caucasian government, that called the Bogdinskoy, forty versts from Tschernoy, yields the best salt. For this reason therefore, as well as on account of its small distance from the Volga, it ought to be at least as much worked as the Elton, to which the preference has hitherto unjustly been given *.

One part of these beneficial suggestions is already put in practice since the russian empire has been in possession of a SALT-REGULATION, which is drawn up with so much legislative wisdom that it may in general serve as a model for similar objects. In pursuance of this regulation the finance-office must keep an account how much salt is procured and consumed in each government; if it contain any salt-springs, lakes, or mines, hitherto not employed, must cause them to be examined by

* Guldenstädt's akad. rede, &c. 111. Herrmann proceeds to more particular details on the improvement of the salterns in his Beschreib. des ural. erzgeb. and Lepekhin in the second part of his travels.

apothecaries and chemists, and if the salt be found wholesome, to inform the magistracy and the imperial high-treasurer, how much, in what manner, and at what expence it may be produced and transported. If salt-places be anywhere found which have been formerly worked and afterwards abandoned, the finance-office is bound to inquire into the causes of this neglect, and inform themselves of all the particulars. To facilitate this duty to the finance-offices, the regulation proceeds to give an exact list of all the salt-places at work in the year 1775, with the notification how much was sold of each kind of salt from the crown-magazines from the year 1770 to 1775.

The finance-offices have the jurisdiction over all the salt-places and salterns belonging to the crown, but are not allowed in any way whatever to meddle with the management of private salt-works, which are again specified in a missive from the senate. Every government has in each of its circles a salt-magazine, situated conveniently for transport and sale; but in every government which has salt-works and obtains more salt than it wants for its own consumption, are likewise store-houses, whence the governments assigned to it are to be supplied *. All these magazines must

* This distribution was a few years ago in the following order: 1. The governments of Vologda, Caucasus, Irkutsk, Kolhyvan, Tobolsk, Ekatarinoflaf, and Taurida supply themselves with their own or neighbouring salt. 2. The governments

be constantly furnished with a stock of salt for two years ; if besides a surplus still remain, it may be sent over the borders into other governments, or even transported out of the empire.

An inspector is appointed to every store as well as to every circle-magazine who keeps the necessary accounts, receives the salt of the contractors and pays them for it, and conducts the sale of the salt to the assigned districts. The money obtained from the sale he delivers weekly to the receiver-general. This money is divided into two sums : the salt-capital, which is applied again to the procuring of the salt that is wanted ; and the profit or surplus, which is destined to defray the expenditure, which, in pursuance of particular orders, is to be paid out of the salt-revenue.

vernments of Riga, Reval, and Vyborg import foreign salt. 3. The other governments obtain their salt in the following manner : The salt from the lake Elton is distributed in the governments of Pensa, Kostroma, Tula, Tambof, Saratof, Yaroslaf, Simbirsk, Kazan, Kharkof, Voronetch, Kursk, Orel, Riäsan, and part of Kief, Tschernigof, and Novgorod-Severski, whither also at present a part of the tauridan salt comes. The permian salt goes into the governments of Mosco, St. Petersburg, Tver, Novgorod, Perme, Viätka, Smolensk, Polotsk, Kaluga, Pscove, Vladimir, and Mohilef ; and the iletzkian salt is allotted for the governments of Ufa, Nishnei-Novgorod, and likewise a part of Kazan. The demand of the last 31 governments in 1783 and 1784 amounted to 19,719,939 pood. See Herrmann's statist. schild. p. 334.

In

In the governments where the crown has reserved to itself the salt-trade, private persons may not sell their salt, except to the imperial magazines. — Any body may buy salt at the crown-magazines in large and small quantities at the stated price of 35 kopecks the pood, and sell it again in retail. Whoever would buy more than ten pood must apply for it in writing, and whoever more than fifty pood must moreover declare before the magistrate that he is no ingrosser.

We shall conclude this brief view of the russian mines and salt-works with a few arguments which may make more evident the importance of the mineral production. Difficult, and unauthenticated as the calculations may be which are made as the total product of all national occupations, so easy and certain is such an account to be made concerning the mineral productions, as these are everywhere entrusted to an administration which accurately controls the annual amount of them. According to the facts we have adduced, it may be admitted that at present every year there is produced in the russian empire of gold about 40 pood, of silver 1300, of lead 30,000, of copper 200,000, of iron 5,000,000, and of salt 12,000,000 pood; a quantity of mineral products, the value whereof in money may be estimated by the most moderate computation at 1.3 millions of rubles, and in which the precious-stones, sulphur, vitriol, and other collateral products of mining are not comprised.

comprised. Now adding to this the probable rise in the price of mineral products since 1798, and attending at the same time to their present value, the said sum may without exaggeration be fixed at 15 millions of rubles; an annual profit arising from funds which, at the beginning of the eighteenth century, (a portion of salt excepted,) lay in the bosom of darkness and oblivion.

To deliver similar tables of the produce of all the other branches of productive industry, is everywhere very difficult, and in Russia almost impossible. Here only accounts of sowing and reaping of the most important kinds of grain are delivered into the finance-offices, and even these are seldom complete and satisfactory enough for enabling us to draw safe results from them. The products of the chase, of the breeding of cattle, of the fishery, &c. cannot absolutely be ascertained with any probability. — Instead, therefore, of bewildering ourselves in hypotheses on the total amount of these objects, we will rather endeavour to calculate the VALUE OF THE SURPLUS WHICH THE PRODUCTIVE INDUSTRY in general, after deducting the home consumption, HAS OBTAINED FOR COMMERCE. To assist us in this calculation the custom-house registers afford us a basis, which, if not completely satisfactory, yet at least come very near the truth, and always deserve, for want of other means, to be consulted. According to the lists of exports of 1793, which we have all

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along followed in these sections, the exports by sea in that year, from all the ports of the empire, those of the Caspian excepted, amounted to, in products

Of the CHACE, viz. skins and furs, Rubles.

castoreum, feathers, and down - 496,000

Of the FISHERY: isinglass, kaviar,

train-oil, fish, and morse-teeth -. 762,000

Of the BREEDING OF CATTLE: tal-

low, hogs' bristles, butter, sheep's

wool, dried flesh, and tongues,

horse-hair and tails, live cattle - 5,276,000

Of AGRICULTURE: hemp, flax, grain,

linseed, and hemp-feed, hemp-feed-

oil and linseed-oil, tobacco, peas,

and grist, anise and cummin - - 16,138,000

Of HORTICULTURE - none -

Of the VINEYARD - none -

Of the FOREST-CULTURE: masts,

balks, deals and wood, pot-ashes,

mats, pitch, tar, and rosin - - 2,537,000

Of the BEE-HIVES: wax and honey - 384,000

Of the SILK-WORM - none -

Of the MINES and SALT-WORKS: bar

and cast iron, copper, salt - - 5,230,000

Total in raw products of productive

industry - - - - - 30,823,000

This, therefore, is about the capital with which the productive industry of the nation actually enriched the country in that year; and great as the sum may appear, it is yet probably rated too low.

For, first, there are not in these statements the exports by sea from the harbours of the Caspian, and what is more the whole of the exports by land, together with all the wrought products, as sail-cloth, linen, tallow-candles, soap, &c.; and, besides, the unavoidable incompleteness of the custom house lists must likewise be in favour of the exports. On comparing these circumstances with the increasing activity of the nation, and the extraordinary increase of the population by the late acquisitions, it is more than probable that the value of that surplus is near upon fifty millions of rubles.

With this calculation, which presents the thoughtful reader with abundant matter for reflection, we dismiss these objects of our view, in order to take into consideration a new sphere of social activity. We have pursued the rude and simple employments of the russian countryman through their several modifications while they could excite any humane and political interest in the reader; we will now proceed to trace the progress which IMPROVING INDUSTRY has made since Peter the great, and endeavour to mark the degree at which the useful arts arrived under the brilliant sceptre of Catharine the second*.

* Storch's historische-statistisches gemälde des russischen reichs, tom. ii.

WE will here just add a compressed abstract from the memorable edict, referred to in p. 314 of this volume, by which the labours of the boors are ascertained: I. The boors enregistered to the mines, as well those without the jurisdiction of the crown as belonging to it, and to private proprietors, shall, as before, provide for the necessary labours at the mines: 1. the falling of timber for burning into charcoal; 2. the breaking up the coal-heaps, and carrying the coals to the works; 3. the chopping of wood for the fusion of the metals; 4. the conveyance of the ore obtained to the works, as also the necessary sands and fusions; 5. the making and repairing of the dams, but only in cases when they shall be damaged by inundations or fire. II. The boors are not bound to perform any other work whatever; yet neither is it forbidden them voluntarily to undertake it by agreement. III. They shall be taken on to work at the beginning of the winter-roads, and at the going off of the snow they shall be discharged, that they may attend to their agriculture. IV. A labourer with a horse shall receive daily in summer 20, in winter 12 kopeeks: a labourer without horse, in summer 10, in winter 8 kopeeks. At these wages they shall work out their head-money, amounting to 170 kopeeks; but to more labour they shall not be required or obliged; V.—VII. under penalties, to pay the labourer, above his daily wages, twice as much again. On account of the rise in the price of labour, the

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obligation

obligation on private owners to furnish the admiralty and artillery with iron and stores at a stated price, was annulled. — The boors belonging to the crown-mines have always experienced a milder lot, as the crown is always interested in their preservation. Among the crown-boors are also reckoned, Tartars, Baschkirs, Vogules, &c. who inhabit a great part of the uralian mountains; but they are never annexed to the mine-works, except a few of the Baschkirs, who have thus freed themselves from kozak-service*.

* Herrmann's beschreib. des Urals, tom. ii. p. 238.

V I E W

OF THE

R U S S I A N E M P I R E.

BOOK XI.

IMPROVING INDUSTRY.

Manufactures and Trade.

IN this branch, likewise, of political oeconomy Russia has made signal progress since the reforming reign of Peter the great; though it cannot be denied, that many trades are not sufficiently complete and extended, and others not yet introduced. We will run over the most important in their natural order.

I. OIL-PRESSING. In various parts of the empire HEMP-SEED-OIL, LINSEED-OIL, HAZLE-NUT-OIL, CEDAR-NUT-OIL, and POPPY-OIL, are prepared; of which the two first are made in the greatest quantities. Hazle-nut-oil is chiefly made in the government of Kazan; cedar-nut-oil (though but little) in Siberia, and poppy-oil in many parts.

— In Yaroslaf is a manufactory where juniper-oil is made, and in Tver and Vologda are two for the making of turpentine-oil and colifonium. About Simbirsk an oil is likewise pressed from the fruit of the wild-almond shrub. — The hemp-seeds are for the most part pressed by the boors themselves, by means of little oil-mills, in which the seeds are crushed by a small block-pestle worked by a horse. They are then put in a large pan into an heated oven, and, when they are thoroughly hot, the crushed seeds are laid between coarse linens in the press. Five pood of seeds commonly yield one pood of oil. — The preparation of the linseed-oil is performed in nearly the same manner, and affords almost a like quantity of oil. — In Russia during the numerous fasts an incredibly great quantity of oil is consumed; and there being a constant scarcity of fine oils in the country, and particularly of olive-oil, much of it is imported for the tables of people of condition: on the other hand 150,000 pood of hemp-oil is annually exported from St. Petersburg alone.

II. TRAIN-OIL. Not to mention the various oils prepared as food by the Samoyedes, Ostiaks, &c. on the coasts of the Frozen-ocean, we will only take notice of the blubber of the morfes, which is boiled in great quantities on the coasts of Archangel and Olonetz. It is commonly melted at home in copper kettles over the fire, and generally mixed with the fat of the seal and the beluga, and

and is sold in Russia under the name of vorvannoy salo. Several thousand pood of this train-oil is every year exported by sea from Archangel: in 1783 the quantity amounted to 40,248 pood. — On the Caspian also much oil is made from the fat of the beluga; to this end the fat in particular, which in the milters lies thick about the milt and on the sides, is scraped away with knives, collected into casks, and again boiled and cleansed. — This fat, when fresh, is well tasted, and may be used instead of butter and oil in fasting times.

III. ISINGLASS. The isinglass is a product, the preparation whereof is almost peculiar to Russia. It is made in all places where the large kinds of sturgeon are caught; as, on the Dniepr, the Don, and especially on the Caspian; also on the Volga, the Ural, the Oby, and the Irtysh. The isinglass is prepared from the sounds of these fish. On the Volga, that prepared from the sturgeon is reckoned the best, next to that the beluga; but that from the sevruga is mixed with the sturgeon. But isinglass is also prepared from sterlets, shad, and barbel, though not so good. By some, however, the sterlet-isinglass is much esteemed as glue; it is particularly tenacious, and is excellent in inlaid cabinet-work. All these kinds are watered while fresh, afterwards dried, the outer skin taken off, and the inner, glossy white, which is properly the glue, twisted into various shapes, and so dried. The best is usually rolled in little ringlets; the

second sort is laid together like leaves of a book, and the most ordinary is dried without any care. Farther down the Volga, likewise, a fine glue is boiled and cast into various forms. On the Okka, where only the sterlet is to be had, the sounds are beat just as they are extracted from the fish, and dried into glue. The sounds of the shad are pounded, and as the glue does not entirely dissolve, it is strained, and the filaments separated from it. — On the river Ural, where the Kozaks prepare ichthyocolla or fish-glue in the greatest quantities, the fresh sounds are washed and laid out in the air to dry, so that the outer skin lies undermost, and the silver white inner skin upwards. By which means the latter is easily separated, then put into a moist cloth, and forcibly kneaded with the hands. Then they are rolled one after another, and drawn, to the form of a snake or a heart, between three pegs, on a board stuck full of them; and, when they are somewhat dried in this situation, they are hung on lines in the shade till their moisture is entirely gone. In Gurief a fine boiled fish-glue is prepared, perfectly transparent; having the colour of amber, and is cast into slabs and plates. — On the Caspian, about the Oby, the Irtysh, &c. the fish-glue is made in much the same manner, only that there the sounds are cut in strips, and then rolled up. The Ostiaks likewise boil their fish-glue in a kettle so long as till it boils over.

IV. PREPARATION OF KAVIAR. Kaviar, it is well known, is the prepared and salted roes, which are got in abundance from the large kinds of fish. The uralian Kozaks are particularly famous for making excellent kaviar. The best is obtained from the several kinds of sturgeons, the fevrugas, and the belugas. Most of the kaviar that is exported from Russia goes to Italy. It happens some years that this export amounts to from 15,000 to 20,000 pood. It is prepared in three different ways. The worst sort is the common pressed kaviar, payusnaia ikra. To this end the roes are cleansed of the coarsest filaments, salted with about two pound of salt to the pood, and then spread upon mats in the sun to dry, after which it is trodden with the feet, the fellow who treads it having leathern stockings. A better sort is that called the grained kaviar, fernistaia ikra, but is too salt to be agreeable to every body. The cleansed roes are salted in long troughs with eight or ten pound of salt to the pood, well mixed by shovelling it over and over, then put by portions into sieves or thick nets stretched out, to drain and to coagulate, on which it is immediately pressed into casks. The cleanest and best sort is that which to appearance consists entirely of the eggs of the roes, and does not easily become fetid, termed from its preparation mescheschnaia ikra. The first thing done is to get ready a strong brine; then long narrow bags of strong

strong linen. These are half filled with fresh roes, and filled to the top by pouring in the brine. When the brine has oozed through, the bags hanging on transverse poles are powerfully wrung with the hands one after another; and the roes after drying for ten or twelve hours in the bags, are put into small casks. — From the Volga in winter large quantities of kaviar unsalted are sent to all parts. The method here used in salting the roes, is by putting them, after being well cleansed and salted, into cisterns, with a number of holes in the bottom, through which they are set to drain by weights laid on at top, or are wrung in linen bags, then pressed in casks, with fish-fat poured over the surface, in order to keep it as much as possible from corruption. In like manner is the kaviar prepared in the other parts of the empire, where they have fish proper for that purpose. Among these are reckoned the white salmon and the pike, from the roes of which a reddish kind of kaviar, *kraffnaia ikra*, is prepared.

V. SOAP-BOILING. So much soap is made in Russia, that she is able to export a considerable quantity. It is of two sorts, white and black soap, that in which fish-fat and linseed-oil are mingled, and what is called the dutch soap*.

* In Astrakhan they make soap of pot-ashes and seal-blubber, which is said to be excellent for wool, and is called tartarian soap. — Black or brown soap is, among others, made very good in Kostroma.

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The soap-works, which were formerly under the direction of the college of manufactures, are on the estates of count Scheremetof in Nishney-Novgorod, those of count Soltikof in the infertskian circle of the government of Kaluga, and two in Petersburg belonging to the merchants Meyer and Tschukin. But most of the soap is made by russian burghers, merchants, and boors. The soaps of Kostroma, Vologda, Kazan, Arsamas, Mosco, Tzaritzin, Murom*, &c. are in high esteem.

VI. TALLOW-CHANDLERY. The inhabitants of Vologda, the moravian brethren near Tzaritzin and some other parts are in good repute for their fine tallow-candles. Great quantities of mould-candles are also made†; yet it cannot be affirmed, that this business is brought to any great perfec-

* Of the soap-boiling in Murom see Lepekhin's journal, tom. i. p. 25.; and of that in Kazan, Georgi's travels, tom. ii. p. 215.

† The whiteness of the candles made at Kostroma proceeds from this, that it is chiefly the tallow of young cattle that is used for making them. The best turned wicks are procured from Holland. The tallow is shred and thrown into kettles of boiling water, for melting; then skimmed off with a ladle, and passed through a sieve into a cooler filled with hot water. Ere it be cold it is poured into a clean trough. The unclean residue is pounded, melted again in a kettle of warm water, whence as much as is necessary is poured into the usual copper-tinned moulds, and the process is conducted in the ordinary way. The price of the best candles in Vologda is from 180 to 200 kopeeks the pood.

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tion, as it is followed in most places by old women, who understand little about the matter, except just knowing how to clean the tallow. Notwithstanding this, not less than twenty thousand pood of tallow-candles are exported every year by sea from St. Petersburg: this article might be extended to a surprising degree; for the exports in raw tallow amount at present in value to far above a million of rubles.

VII. BREWERY. Though a great deal of beer is brewed in Russia, yet every year upwards of a hundred thousand rubles were paid during the late reign for english ale and porter. It is true that in most parts only a sad rye-beer is made, which almost every family brews at home. But likewise very fine BEER is brewed in St. Petersburg, Mosco, Nishney-Novgorod, Riga, and other places. That of Riga is said to approach very near to the english, and would certainly give satisfaction to the beer-drinkers, if attention were paid to a few seemingly little circumstances, such as, the quality of the casks, the transport by sea, the time ere it be tapped, &c. On the Okka, in the government of Nishney-Novgorod, are several large brewhouses, in which, with the water of that river, (for the Volga-water is unfit for that purpose,) an excellent light-brown, bright beer is brewed, little inferior to burton ale. One of these breweries, which Mr. Herrmann visited, had seven large vats with iron hoops, each holding about

250 vedros; at one brewing they used one and a half chetverts of rye-malt, three chetverts of oat-malt, three chetverts of barley-malt, and one and a half pood of hops, and obtained from this wort 130 vedros of beer, each vedro reckoned at twelve english bottles; which altogether sold for about twenty rubles*. — We must here take notice of the brewing of some other liquors commonly drank in Russia. The most common of all, and which every boor drinks daily as his ordinary household beverage, is QUAS. Its preparation is as follows: to one chetverik (about thirty-five pound) of barley-malt they add two or three handfuls of rye-malt, and the same proportion of unbolted rye-meal, throw it all into earthen pans, pouring on it to the height of four inches boiling water, and stir it about till it resembles thin porridge. On this they shake about two inches high of oat-husks, and set the pans in the oven, where they

* On the Terek a sort of beer is brewed, called *terkaia braga*, by soaking millet in warm water, and when it is swollen like malt, it is bruised, boiled soft, and so poured upon malted-rye and barley. By the malt the brewage is tepid, and in this state oats are added; it is left to ferment, and the husks being strained from the drink, it is fit for use. It is of good colour, always turbid, rather clammy, disgusting to the taste and smell, but very intoxicating. Falk. tom. i. p. 93. — The russian braga is a beer made of wheat, as *busa* is brewed from only millet; they are turbid, foaming, mount into the head, and are only drank by the common people.

remain twenty-four hours. Boiling water is now again poured on it, till it is full to the brim. This done, it is poured into wooden vessels laid at bottom with straw, having a plug on one side towards the bottom; lukewarm water is poured on it again, leaving it to stand, and lastly it is drawn off into casks. In every cask a piece of coarse rye-bread is put to acidulate the quas. The casks are put in the cellar, and after twenty-four hours it is fit for drinking. From the foregoing quantities six or seven vedros of quas are obtained. It may be made of barley-malt alone; but the rye-meal is absolutely necessary. — In most places, however, they do not go so circumstantially to work about it: it is even customary to leave out the barley-malt, adding much more meal than rye-malt; to half a pood of meal only about two or three handfuls of malt. Instead of bread they put in some yeast of the former quas-making; some add likewise raisins, by which the quas acquires a strong foam. Numbers even make quas from rye-meal only. In all these modes of process cold or tepid water is poured on the ingredients, the pans greased, and so set in the hot oven. — Another kind of quas, called KISSLY-SCHTSCHY, is made with boiling water and rye-meal alone, the mixture being violently and long stirred about in hot water, then cold water poured to it, the vessel set by for fermentation, and then drawn off into bottles. This fine drink foams vehemently

vehemently and pearls with the solution of a gas, that sparkles like feltzer water. The kifsly-schtschy has some resemblance with the Vienna hornerbier. — In some houses they also take a small quantity of honey, or raspberries and cranberries and other fruits, for making quas, by which it acquires an agreeable ruby colour, and is extremely pleasant to the taste. — MEAD is likewise almost as much in request as quas, and is one of the most ancient drinks in Russia*. Mead is made of two kinds, white and red. For preparing the former, to two pood of white honey they pour five ankers of clear river water, and let it boil in a kettle, constantly skimming it and taking care that it do not boil over, till nearly three quarters of an anker are boiled away. This boiled honey-water is then strained through a hand-sieve or a piece of linen into a broad open vessel, mixing with it a couple of spoonfuls of beer-lees, and a pound of white bread, kalatsch. After it has stood in this manner covered in a moderately warm place and fermented for thirty-six hours, this fermented honey-water or mead is poured through a sieve or linen into a cask, in which has been previously put a pound

* “ Il est parlé de l’hydromel,” says Levesque, “ dans la plus ancienne chronique ; c’est de l’hydromel qu’ Olga enivra les principaux Drevliens. Elle tenoit les rênes du gouvernement de 945 jusqu’en 955. Histoire de Russie, tom. ii. p. 274.

of small-thred isinglass for clarifying it. — If they would give a great deal of spirit and a very excellent flavour to the mead, they fill it either with good wine lees, the best are of hungary wine, or add twelve bottles of a sweet wine to it, and then hang in the cask an oblong bag containing half a pound of coriander seeds, a quarter of a pound of cardamums, and three quarters of a pound of the roots of the iris, or fleur de lis. This done, the cask is stopped close, securing the bung-hole with pitch or clay, and leaving it at least twelve days to rest, ere they drink of it.

For making red mead, to one pood of honey put about eight vedros of water, and boil them together till reduced to six vedros. When this is cold, press about half a chetverik of klukva* through a sieve, and add this juice to the honey-water. After this three spoonfuls of yeast are put in; lastly, a roll of clean sand and isinglass (about four ringlets of it) is thrown into the vessel, to clarify the mead. To give it a fine flavour, they hang in it some cinnamon, cloves, and other spices. Ere it can be used it must stand at least two weeks, and that in a cool place; otherwise it will fly all about.

This is the most usual kind of red mead; but it is likewise made with various other kinds of berries, ex. gr. for preparing raspberry-mead, put to

* *Vaccinium oxycoccus*, Cranberries.

one anker of water half a pood of honey, boil it, as said above, leave it to ferment, and add about six pound of raspberries. To make this mead more excellent, to this quantity pour four bottles of wine, and suspend in the vessel a bag with one and a half lote of cloves, three lote of cinnamon, and two lote of cardamums. In the same manner a cherry-mead is made, by proceeding as before, and instead of six pound of raspberries, take from fifteen to eighteen pound of cherries with the stones broken.

Other ruffian liquors are the berry wines which are made in the country in very many houses, such as cherry-wine, vischnovka; raspberry-wine, malinovka; bullace-wine, chernovka, and others. The mode of preparation is not everywhere alike. For making cherry-wine, about five or more vedros of ripe cherries of the steppes are crushed in a wooden tub, so that even the stones are broken. To each vedro add one, one and a half or two pound of honey, and a quarter or half a quart of good brandy or wine, and put in some yeast to make it ferment. Having properly fermented, it is cleared of the yeast and poured into kegs or bottles, then placed in a cool cellar. Wine and brandy are omitted by many housewives, particularly when they have no need to be sparing of their honey, by which the wine proves strong enough. The same process is used with other fruits. — Birch-wine, from the sap of the birch-

tree, which with honey or sugar ferments into wine, is made on several estates of the nobility in Livonia in such perfection, that it can scarcely be distinguished from champagne. The receipt for it is thus: To an anker of fresh birch-juice put seven pound of sugar, and boil it together till the fourth part is boiled away and skimmed off. After the skum is taken off, and the water well boiled, put six lemons carefully peeled into a clean tub, pour six bottles of good french white wine, and then the boiling hot water upon it. After it is become barely tepid, add two spoonfuls of yeast, let it stand three or four days, and afterwards set the vessel in the cellar. At the end of four weeks bottle it off, and in the course of a few days this fine sparkling birch wine may be drank. — With birch-juice some likewise make beer, which is very spirituous, and by which a considerable saving is made in malt.

VIII. DISTILLERY. This is one of the most extensive, and the most beneficial of all trades to the crown. Brandy is the idol of the russian populace, and the inexhaustible source of revenue to the government. But whether it be equally beneficial to the health and morals of the people, is quite another question. The brandy drank in the greatest quantity in Russia is distilled from corn; and we shall certainly not be mistaken in our calculation, if we set down the whole consumption of the empire at five millions of vedros. For

For producing five millions of vedros, about one and a half million of chetverts, or ten million poods of corn are necessary. The sale of it, as is well known, is a monopoly of the crown, and the right to distil it is confined (with the exception of a few privileged provinces) to the nobility who possess landed estates. The districts that abound in corn are therefore those which distil the most brandy, as, Little and White Russia, Livonia, the governments of Kharkof, Voronetch, Orel, Kursk, Kaluga, Tula, Tver, Kazan, Nishney-Novgorod, Simbirsk, &c. — The process in making the corn brandy, however, is not alike in different districts. In Livonia the brandy is commonly distilled from barley-malt and rye, of each equal parts, or of rye, barley, and barley-malt. It is customary to put to a vessel of 120 english quarts 900 pounds of barley. The usual way of distilling here is with the worm-pipe, and the ordinary fuel is turf. The process is generally as follows: the meal is put in a vat, thoroughly soaked with boiling water, and beaten till not a particle of it is to be seen. In about two hours time it is beaten again but more violently, and then as much boiling water added as is necessary. Some of this is put into a tub, mixing with it cold water and yeast that it may ferment. When a fourish smell is perceptible from the vat, cold water and the mixture from the tub are poured in, then covered close, and all left to ferment,

till the scum upon it falls down, and all is clear at top. Then it is brought in the copper, and what is obtained from that is put into the rectifier. The sign by which expert distillers know when the fermentation is complete is the strong smell they perceive on opening a little the cover of the vat, and by a thin scum on the surface resembling mouldiness. The vat is closed not only with a lid, but also with wet cloths. As a proof that the brandy is of a proper strength, not less than one half of it must burn away in a silver vessel*. At a large distillery belonging to count Shuvalof on the river Uk in Siberia the process is conducted in the following manner: the premises contain 106 coppers, 28 coolers, and 6 stills. To every cooler are reckoned ten chetverts of rye-malt, with a fifth or a seventh part of oats or barley. The coppers hold forty-two vedros, and are commonly all filled out of one cooler, so that the series generally comes round in four days; and as the coolers are immediately replenished, the work may proceed without interruption. At every distilling-house is besides a large copper set in masonry, from which the hot water is let into the cooler by pipes. Here are annually consumed from 30,000 to 40,000 chetverts of corn; and it is reckoned that from one chetvert three, and if it turn out well, four vedros of common brandy

* Hupel's topogr. nachricht. tom. ii. p. 311.

are

are obtained*. But where they pretend to a more methodical process, they employ worm-pipes and otherwise act upon sound chemical principles, and consequently receive considerably more produce, as, at the distillery at Mosco belonging to M. Grivt-zof, which annually yields 15,000 vedros of brandy, where from one chetvert five or five and a half vedros are produced. — At Astrakhan, in the Ukraine, &c. also brandy is made; but fine spirits or liqueurs are prepared in great quantities in St. Petersburg, Mosco, Riga, Kazan, &c. At Kamtschatka a great deal of brandy is distilled from the herb bear's-breech, or brank-ursine, or sugar-kraut†. This plant is so sweet that the Kamtschadales sweeten their victuals with it. When the stalks of that which is gathered in July are stripped of their outward skin and dried, they are seen so thickly covered with a saccharine rime, or a sort of sugar-flour, that from it, as is with good reason supposed, large quantities of sugar might be easily prepared with certain and great profit. In the afore said liqueur-fabrics the corn-brandy is sometimes employed, but more generally foreign wines, raisins, &c. There is a fabric of this sort seven versts from Petersburg, which was first set up in the year 1782, and belongs to M. Dolst and company. They have eight coppers and con-

* Pallas, travels, tom. ii. p. 421.

† *Heracleum sibiricum*. Russ, slatkai trava, sweet-herb.

sume in a year about 1200 hogsheads of spanish wine, and 3000 pood of raisins, and produce 80,000 stoffs of fine spirits. — At present however they distil only from wine, as raisins are too dear. One hoghead* is put at once into a copper, from which one and a half anker of spirit is obtained. This is then supplied with sugar, syrup, or honey, and seeds, &c. and distilled from the same copper. From one oxhoft of wine comes one anker of spirit. Of this fifty stoffs make a portion, and is sold for sixty-five rubles. An oxhoft of wine costs thirty rubles. Here in one year about 1000 pood of sugar and 1000 pood of syrup and honey are consumed. — A curious kind of spirits, which we have occasionally mentioned before, and prepared in great quantities by the Kalmuks and other siberian nations, is the milk-spirits. The Kalmuks distil this kumiss from mare's milk, in which they proceed in the following manner: The milk is previously soured in large leathern vessels, which is sometimes effected by leaven or the remainder of the former distillation, &c. The cream is not taken off from the milk that is to be distilled, but all mixed well together from time to time with a sort of churn-staff; and, as in summer the milk is collected in leathern vessels, they require to be thoroughly shaken twice a day. The mare's milk thus soured is called in kalmuk

* Or oxhoft. One oxhoft contains six ankers, one anker twenty-four stoffs.

tschigan, but soured cow-milk *argan*, and is either consumed as drink, or saved for making spirits. When a sufficient quantity of such milk is got together, and it has been finally left to get completely sour for a few days, the converting of it into brandy is begun: the large iron kettle for that purpose, well rinsed with water or melted snow, is set on a trivet over a slow fire, into which the milk is poured, thoroughly stirring it all the while, to within two fingers breadth of the brim. One of these kettles holds about three vedros or upwards. The cover is then put on, which is somewhat hollowed and made to fit, composed of one or two pieces of wood with a couple of square holes in it, and well luted about the rim and joints with clay, mortar, or fresh cow-dung*. This done, a smaller kettle is prepared, with its cover, which has but one large opening and a little vent-hole, well luted, and in a trough full of snow. To this is added, a crooked wooden pipe, furnished with two handles and a cock exactly fitted and drawn over with leather or bladder, having one end on the opening of the small kettle and the other on one of the apertures in the cover of the large kettle closely luted, and afterwards another little cover is made of clay or paste with a conical point, and placed near the other aperture of the large kettle; and fresh fire is added. The uncovered

* Flour paste is likewise used for that purpose.

aperture of the great kettle is watched till the milk in it is fiercely boiling and a strong vapour is seen to mount, which, if mare's milk, easily kindles into a blue flame. Then the aforesaid little cover is put on the aperture, fixed fast, and the fire lessened. The little vent-hole in the cover of the recipient-kettle remains open, notwithstanding much inflammable vapour escapes by it; as the Kalmuks say, that without this vent the distillation would not succeed. In less than an hour and a half the vapour diminishes; then the brandy is drawn off, and there is obtained, if from cow-milk, about two-ninths, at most one-fourth, but of mare's milk a full third part of the whole quantity in bad brandy, which but rarely, and of cow-milk never, is so strong as to be inflammable, unless it be done over again*. The Kaschtinzes, Beltirs, and other Tartars also extract a spirituous liquor from milk; their apparatus for distillation is however on a better plan. The principal matter is to bring the milk into a spirituous fermentation, to which their mode of proceeding and the uncleanness of their vessels contribute not a little.

IX. VINEGAR-MAKING. Beer-vinegar is made, and vinegar from the lees in the distilleries, a little wine-vinegar at Astrakhan, and fruit-vinegar in several parts. The first is made in greatest quan-

* Pallas, travels, tom. i. p. 315.

tity,

tity, but almost everywhere bad enough. The second, which is here called white vinegar, might be had in far greater quantity and of a better quality than is actually the case.

X. AQUA-FORTIS and AQUA-REGIA. What is used for the separation of gold and silver at St. Petersburg is made there. To a pood of saltpetre and a pood and a half of vitriol, about nine pound of water is put into two recipients; and from this compound is obtained a pood of aquafortis. Whether anywhere else in the empire aquafortis is prepared is not known to me. Oil of vitriol and all other acids, which are not made in the apothekes, come from abroad.

XI. POTASH-MAKING. This is a very ancient and considerable trade in Russia, to which the numerous and vast forests in many of its provinces have given rise. In those districts it is carried on to such extent that every year a considerable quantity is exported. Some of these fabrics belong to the crown but more to private persons. The crown has potash-fabrics in Murom, Arsamas, Tolstoi-Maidan, Alatyr, Sviyask, &c. It is prepared from oak and all the species of pine; also a great deal of what is called wood-ashes is here made. A considerable part is made merely of the ashes from the stoves. — At Tolstoi-Maidan, 112 versts from Arsamas is the largest of these works belonging to the crown, at which the process is as follows: The ashes delivered by the boors at a
3 certain

certain price are three times washed out in large vats, into which the water is let by cocks, yet so as to leave the worst lye to be done again with fresh ashes. The saturated lye is boiled in coppers set in brick, and the potash calcined white in an oblong square reverberatory furnace, and as soon as it is cold put into casks. The fabric here has thirty-two ash-vats, four boilers, and a calcining furnace; and with this establishment by constant work it is able to produce annually 300 casks, each at 20 pood, to which upwards of 6000 chetverts of ashes are requisite, because only the best ashes of each chetvert usually yield a pood of lixivious salts*. The best russian calcined potash is known to merchants by the name of pearl ash.

XII. SALTPETRE-MAKING. This likewise is a business much pursued; and Russia now exports saltpetre in great quantities: from St. Petersburg alone annually about twenty thousand pood. The salt-petre fabrics are very numerous, belonging chiefly to the crown†. As most of the saltpetre-

* Pallas, travels, tom. i. p. 59.

† The principal saltpetre-work is that about sixty versts above Astrakhan, at the place where was formerly the capital town of the golden horde; it lies on an arm of the Volga, and is carried on by the people of the artillery-corps. They produce so much saltpetre, that, after deducting what must be delivered to the powder-mills, they are able to export every year from Petersburg many thousand pood on the crown's account. So early as the reign of Peter I. this saltpetre-work produced yearly 30,000 pood.

earth is found in Little-Russia, and in the territory of the Don, on the Volga, &c. these works are therefore generally erected there. But likewise in other parts, where no manufactories are yet set up, there is much saltpetre-earth, as, near Syfran, and about Kaschpur, and in Siberia, on the Yenissey, the Iyus, the Abakan, &c. But particularly fertile in it are almost all the districts of the Ukraine, and of the neighbouring governments. Most of the saltpetre is here prepared by the Kozaks, in which they proceed nearly in the following manner: the saltpetre-earth is thrown into a kettle, and hot water poured upon it: when the lixivium is sufficiently saturated, some lixivious salt (prepared from burnt straw and herbs of the steppes) is added; it then clears and shoots and crystallizes into saltpetre. The exhausted earth is then thrown out in thick round lumps and exposed to the effects of the air, and in four, six, or perhaps ten years it is used again to great advantage; though it has never occurred to these people to add to it putrid, fat, oleaginous, unctuous, and other substances from plants and animals, as urine or dung. — At other places, ex. gr. at Tambof, instead of the above soda they add the common potash.

XIII. ALUM-MANUFACTORY. Notwithstanding, as we have before observed, that in several parts of the empire good alum-earth has been discovered, yet the preparation of this salt so necessary to a number of trades, has never rightly succeeded,
Good

Good alum-earth (to say nothing of the gravel) is found in the parts adjacent to the Shilka and the Argoon, in the nertschinskian mountains; about the Yenissey, the Tom, the Ai, the Isset, and the Volga, and in various parts of Little Russia. Near Tambof some years ago an alum-work was set up which is at present conducted, though but feebly, on the crown's account *. For several years consecutively 34,000 pood and five pound of alum were annually imported into the harbours of St. Petersburg, Archangel, Riga, Reval, and the other ports of Finland. The berkovetch of Swedish alum commonly costs at St. Petersburg 27 to 30 rubles; consequently this makes an object of more than 90,000 rubles per annum. It would therefore be well worth while to consider seriously of preparing this article at home.

XIV. VITRIOL-MANUFACTORIES. Russia has several of these in which iron and copper vitriol are prepared. In the government of Olonetz is an iron-vitriol fabric carried on by the crown, and

* Of the alum-earth there Guldenstædt thus speaks: "The
 " vitriolic earths are here so rich, that the native salts bloom
 " outwardly upon them. — When, after exhausting the
 " earths, the iron-vitriol separates by the first crystallization
 " and deposes a lixivium, a pure alum is generally obtained,
 " the quantity of which would be still more considerable if
 " the earth were set out in the open air exposed to the wea-
 " ther." Travels, tom. i. p. 40. — In one year this manu-
 factory prepared only 984 pood of alum and 828 pood of
 vitriol.

obtains

obtains annually 2000 pood of vitriol. Of private manufactories there are about eleven: one at Mosco, in the circle of Mosco; another in the klinskoi-circle; one in Rostof; one in Kaluga, in the bescheskoi-circle; one in Yaroslaf; two at Vornetch; and at Putavl likewise a vitriol-manufactory.

XV. BITTER-SALT preparation. The bitter salts * of Siberia and Astrakhan, which are prepared from the brine of the bitter-lakes, are well-known, and are now in common use in the apothekes. Somewhat of a similar salt was formerly prepared also near Tzaritzin. If a foreign vent could be expected for it, it might be likewise obtained in great quantities from the native brine at the salt-works, which is at present thrown away. At the same places much sal-ammoniac might be gained, and according to Dr. Pallas it may even be prepared from the dunghills about Saransk, 203 versts from Arsamas.

XVI. SUGAR-WORKS. Of these are four in St. Petersburg; one in Kaluga. But, on account of the high price of the raw material, they are no longer at work. — Besides these, there was another at St. Petersburg, which for its magnitude deserves to be particularly mentioned. The premises stand on what is called the Matifova island at the extremity of the Neva; and, by this peculiar situation, had the advantage of bringing all

* Magnesia vitriolata.

its materials by water. This manufactory, at which annually from 70 to 80,000 poods of sugar were made, was likewise connected with a large distillery; it had also six large breweries, with two corn-mills, and a spacious orchard, which on the side towards the Neva afforded a delightful prospect. These premises comprised a space of 1980 square fathom. The first proprietor was a russian merchant named Gutuyef, and the works cost him 150,000 rubles; it afterwards belonged to prince Potemkin Tavricheskoy, and at present Michael Godfrey Trozien, a merchant of St. Petersburg and a very active man, is the owner of it.

XVII. MANUFACTORIES OF COLOURS FOR DYE-HOUSES. Works of this kind, where white-lead, minium, berlin-blue, paint, verdigris, and in some also sealing-wax, are made, are these: in Mosco two; at Vereá one; at Tula one; at Kof-troma three; in Savsk three; in Vologda three; at St. Petersburg three. Where only sealing-wax is made: in Vologda two; in St. Petersburg two; with a few others of less note in different places.

XVIII. DYE-HOUSES. Where silks, cottons, woollen stuffs and linens are dyed, are: two in Mosco, and one in St. Petersburg. These however are not to be compared with the large dye-houses which here belong to the cloth, cotton, and silk manufactories, and where certainly many goods are dyed as well as any that are done abroad. — Besides, domestic dyeing is a very customary business

business with the russian housewives in the country, as well as among the wild siberian nations, to which end they generally use the plants that grow wild in their districts. In most of the countries bordering on the Volga, for instance, where there is a great deal of dyeing, the ordinary process is this: the principal material in these dyes is the moss that grows plentifully in all the marshy pine-forests of Russia *, and is generally known and used under the name of selenitza. This herb is pulverized and made into a strongly acid quas in the usual way with meal, and which serves as an infusion to almost all colours. In this the woollen yarn, which is to be dyed, is put to soak for one night or more; it is then rinsed and dried, by which it receives a yellowish hue, and takes the other colours better and more durably. The common people, who are unacquainted with the properties of alum, practise scarcely any other preparation than this, and in general for all dyes. The Morduanes †, Tschuvasches, and Tartars, instead of this moss employ sometimes the herbs of the yellow spring flowers ‡, sometimes the common wormwood with a little addition of broom §, but mostly, and with the best success, the leaves, which dye

* *Lycopodium complanatum*.

† Concerning the art of dyeing among the Morduanes, which is nearly the same with that here described, see Lepekhin's journal, tom. i. p. 74.

‡ *Adonis verna*.

§ *Genista tinctoria*.

of an agreeable yellow, of a certain thistle *, and with which they dye green the wool that is previously dyed blue with indigo or woad. Some Russians put with the moss-powder a small matter of broom, [drok,] among the quas with which the wool is prepared. The most usual dyeing herbs are: for a bright yellow, the flowers of the yellow camomile †, which in some places is called pupavka; the broom and the dye-thistle ‡. For dyeing deep yellow, the water-burdock §: for deep red, the wild-madder or krap ||. For staining a bright crimson the common duschitza or origanum is taken. Green is best dyed on blue wool with the forementioned yellow-dyeing herbs or birch leaves; but many have the art of dyeing by boiling with an addition of alum from the unblown ears of sedge ¶, a deep green, and from the berries of the faulbaum, kruschina, a yellow-green colour. But for dyeing blue no domestic dye is yet in use, excepting that in Little-Russia they dye blue with the woad that grows wild there §. Moreover, the people

* *Carduus heterophyllus*.

† *Anthemis tinctoria*.

‡ *Serratula*; in rufs, serpucha.

§ *Bidens tripartita*; rufs, tscheryode.

|| In rufs, mariona, which is commonly the root of *gallium mollugo*, or *asperula tinctoria*.

¶ *Arundo calamogrostris*; rufs, mietlika.

§ A merchant of Novgorod, named Popof, made several experiments with indigo prepared from an herb growing very frequently about Novgorod, which was thought by appearances to be a species of anil. This indigo was found, after repeated

people buy woad and indigo, or logwood, and proceed with them in the ordinary method. For dyeing yellow with broom, the powder is put into the very same quas in which the wool has been prepared, in such quantity as to give the compound the consistence of porridge. The wool must first lie a week in the moss alone, then a few days longer in the quas with broom. To beautify the colour the wool is washed repeatedly in lye, after it has been wrung and dried. The dye-thistle is boiled in water alone, or at most with a trifling addition of alum, and the yarn prepared with the quas is dyed in it boiling. With the flowers of the yellow camomile, as likewise with almost all the faint-coloured flowers* that commonly grow in gardens, are dyed both wool and silk; but especially with the latter, it requires some skill to hit exactly the proper addition of alum. The herb of the water-burdock gathered young yields, in water alone, if boiled with

repeated trials, to be in no respect inferior to the american. The death of this person, which happened soon after, was a check to the fabric, from which it never recovered. The experiments were made in the year 1748. Albaum, tom. i. p. 274. — The herb was probably, not anil, but wild woad. — Another woad fabric near Pensa, belonging to the merchant Tavleyef, is mentioned by Dr. Pallas, travels tom. i. p. 75; but the dye is said to be very indifferent, and not lasting.

* Tagetes.

a little alum, a beautiful deep yellow, which, by a small addition of wild-madder, becomes more brilliant, and by frequent dyeing is more and more lively. The wild-madder is, like the generality of plants, pounded in wooden mortars or ground to powder in hand-mills, and made into a thick gruel with water, and set to stand the whole night in a warm oven. The following day more water is added to dilute the gruel, and the madder is strongly boiled. Some, for the sake of heightening the colour, previously seeth some young oak-bark or birch-bark in the water, but the Tschuvasches put water among it. Ever after the concoction is red enough for them, they dye their wool three or four times or oftener; at first lukewarm, but the last time boiling, letting it dry after every repetition. If now the colour be fine enough for them, the yarn is washed in the river and dried. By an addition of the water-burdock-herb, dye-thistle, broom or *carduus heterophyllus*, the colour is brighter and pleasanter. The finest tincture is given by that black-red powder which first separates, on gently pounding, from the root, and is the proper dyeing bark of it. The process with the *duschitza* or *origanum* is somewhat more prolix. The herb is gathered in bloom and chiefly the summits of the flowers, which are all dried in the oven and pulverized. In spring young twigs that have fallen off the wild or uncultivated apple-trees must likewise be collected, and also pulverized. Of both they

they take equal parts; others will only allow of one part apple-twigs to two parts of the dye-herb. To the fourth part are added some grains, guſtscha, stirring all well together with water, and it is set by with some yeast to ferment. As soon as the composition is sour, it is pressed out with the hands, and then spread out the whole night in a warm oven, frequently stirring it about. The dry compound is lastly boiled in clean water, and the dye is ready, for which the yarn must be already prepared in the usual manner. Some, not so circumstantial, take equal parts of the herb and the apple-twigs, and boil them both together, with a small addition of alum; but by this method the red obtained is by no means so fine *. The colour afforded by this herb is the finest of all the dyes which the country-people know how to prepare. In general the colours prepared by these several

* The Kozak-women on the Samara dye red also with the polish cochineal, tschervetz. They lay the yarn which they intend to dye in a thoroughly sour quas, then add alum, and let the vessel with it stand 24 hours in the oven. Then it is wrung out and dried; but the tschervetz is grated in a pan, boiled with water, and when all the dyeing particles are thoroughly extracted, the yarn is put in and boiled once more. With one handful they dye about as much as is necessary for two of the sashes, which they wear, or about a pound of wool. The colour, however, looks no better than that obtained by the common duschitza, or organum, only that it is more permanent. Pallas, travels, tom. i. p. 206.

means look well to the eye, and many of them stand washing without being subject to fade *.

The genuine dye that is given to cotton at Astrakhan with madder, a business mostly carried on by the Armenians, deserves to be noticed here. They get the madder from Ghilan and about the Terek, where it grows wild. It is put in a brick oven sunk in the ground, heated very hot, and covered with earth, where it must lie sweating till the oven is cold, when the roots are taken out the second or third day and spread asunder in order to dry. They are then dried in the sun and ground to a fine dust in a horse-mill, as well as the leaves, necessary to this dye, of the sumack-tree †. Besides these two materials this red dye requires galls, alum, domestic soda, which is burnt in the steppes of Kitzliar and Astrakhan, and fish-grease. This latter is prepared from the beluga, the sturgeon, and the sudak. The cotton yarn is first clean-rinsed in a running stream, and hung out on a fine day to dry on poles. If it be not dry by the evening, it is taken in to avoid the nitrous dew, and the following morning it is hung out again. The yarn is then laid in a tub, and fish-grease poured on it till it is quite covered with it. Here it must lie the whole night; but in the morning it is hung across poles for the entire day.

* Pallas, travels, tom. i. p. 203.

† *Rhus cotinus*.

and

and this is repeated for a week, that the cotton may lie seven nights in the grease, and seven days imbibe the grease in the air, and can be properly ventilated. The yarn is now brought again to the river, cleansed thoroughly, and left to get completely dry on clean poles. After this preparation they make use of the following infusion: they first boil the pulverized leaves of the sumack-trees in copper-kettles, and when these have sufficiently discharged their colour, pounded galls are added, with which the composition must be boiled again, and thus acquires a turbid dirty colour. When sufficiently boiled the fire is taken from under the kettle, and, while the concoction is still hot, alum is thrown in, which immediately dissolves. Galls and alum are in proportion of five pound to every pood of cotton. The composition must be sufficiently yellow, strong, and astringent. When the alum is once dissolved no time is to be lost. For imbuing the yarn with it hollowed blocks of wood or mortars stand ready; in each of which a good ladle-full of the concoction is poured, sufficient for a piece of yarn to imbibe, without leaving any to remain. As the workman pours the concoction into the mortar, he at the same time puts in a piece of the yarn, presses it down with his hand till it is uniformly wet and has soaked up all the concoction; having squeezed it out, he lays it aside, and proceeds in like manner with another piece till all the cotton yarn has the liquor. It

receives from it only a pale yellow colour, but which is not transient; and, having this, it is hung out to dry in the sun on poles, then cleaned in the river and dried again. By this yellow dye, that of the madder is more bright and lively; but the galls damp the superfluous yellow, and prepare with the alum the yarn for dyeing. Some manufacturers, however, omit entirely the sumack leaves, and make the concoction only of galls and alum, in such manner that the galls first boil in due proportion with the necessary quantity of water, and the alum dissolves in a separate vessel with boiling water, when both waters are poured together into a tub, and the cotton laid in it for an hour or an hour and half, whereupon it is gently dried, washed, and dried again. By which treatment the yarn gets a dirty reddish colour. Now the madder-dye must be prepared. Large troughs are placed ready, into which the madder, crushed to a fine red-brown dust, is scattered, and in each trough a large bowl of sheep's blood, which the dyer may have in plenty, is poured. With this the madder is well worked together by the hands, and must stand thus for a few hours, that it may be thoroughly wet, as then this mixture acquires a dark-red appearance, and the madder yields more red by boiling. After this preparation, water is made hot in a large kettle set in masonry, and as soon as it is warm, the prepared madder is infused in such proportion, that for each pound
of

of cotton one pound of madder enters the kettle. With this the dye must be made to boil strongly; and when it is fine enough, which may be tried upon the cotton-threads, the fire is removed from beneath, and all the prepared cotton is brought to the kettle. The dyer seats himself on the brick-work brink of the kettle, dips the cotton-yarn by pieces in the dye, waving it about to and fro, pressing it somewhat with the hands, and lays it piece after piece in troughs standing by. When the cotton has got the first dye, it is hung out to dry: but, as the red is still too dingy, the yarn now once dyed and dried, is put in the dying-kettle and must boil in it over a strong fire for three hours, by which it then acquires that beautiful deep red so particularly admired in the turkish yarn. It does not however always turn out equally fine. The yarn is now taken with sticks out of the dye, the adhering madder is shaken off, the threads are disentangled, reduced to order, and hung piece by piece to dry. When thoroughly dried it is all washed clean in the river and again dried. The whole operation terminates by dissolving the above-mentioned soda, kolakar, with boiling water in tubs prepared for that purpose, of which to a pood of cotton twenty pound, and therefore half the weight, is usually reckoned. Then they have pans of an enormous size, which in Persia are made of a very good strong clay, above one and a half arshines in height, in the belly about

five spans over, and terminating at top with a neck of only about a span and a half: these are kept over a furnace inclosed in brick, or done round with mud, so that only the neck is to be seen. They are then filled with the coloured cotton yarn; and the lye of the dissolved soda, which is blackish and very acrid, is poured in till the jar is filled, in the mouth of which clean rags are stuffed, that the uppermost pieces of the yarn may not miss. This done, the fire is kindled below, and kept under the jars for 24 hours; on which the steam rising from the jars is seen to collect in the rags in red drops. By this boiling the dye is heightened, soaked in, the superfluities removed, and all the grease adhering to the yarn lixiviated from it; and nothing farther is necessary to the perfection of the yarn, than once more to rinse it clean in the river, and to dry it well*.

Another kind of dyeing practised in Russia is the DYEING OF FURS. The great quantity of animal skins and furs, produced every year in Siberia and other parts of the Russian empire, are mostly bought up by the dealers untanned and unprepared, and in that state brought to the towns, particularly to Moscow, where they first receive the necessary preparation; and the skinners there have the art of dyeing the hair in various ways, and especially of giving the ordinary or decayed fables a fine black glossy hue, which however the Greeks,

* Pallas, in Pet. journ. tom. ii. p. 18.

who

who live in Mosco, and deal largely in furs, understand still better than the Russians; but both make a mystery of it. Notwithstanding which, we have been able to procure the following account of it: “ For killing 2 lotes of litharge, take 1, lotes
 “ copper-ashes, 1 lotes of sal-ammoniac, 1 handful
 “ of ashes of brazil, $\frac{1}{2}$ lb. of lime and human-
 “ urine, and put altogether in a vessel, paint the
 “ hair with it cold twice distinctly, dry it, and beat
 “ it out. Afterwards roast little nutgalls, about
 “ $\frac{1}{2}$ lb. sprinkled with a couple of thimblefuls of
 “ linseed oil, in a luted pan, till, by frequently
 “ shaking the pan and by increasing the heat,
 “ they begin to sound hollow; then let the pan
 “ cool of itself. The inside kernel must not be
 “ penetrated by the black of the scorching. To
 “ these pulverized nutgalls take one lotes of english
 “ copperas, $\frac{1}{2}$ to 1 lotes of roman alum, $\frac{1}{2}$ a lotes of
 “ copper-ashes, 2 lotes of litharge, 1 lotes of verdi-
 “ gris, $\frac{1}{2}$ lotes of sal-ammoniac, 1 lotes of sifted
 “ shumac, 1 lotes of antimony or ceruse, and 1 can
 “ of rain-water. When all this is well mixed with-
 “ out the help of fire or more water, it must be
 “ laid on alternately with the foregoing killing-
 “ compound, taking care that after every paint-
 “ ing the hair be well dried. In this state the
 “ coloured hair, turned inwards, must undergo for
 “ 6 hours the killing-compound, and then the dye
 “ is for the last time painted on and dried. Be-
 “ tween the alternations of the laying on the dye,
 “ the

“ the fur, as always after colouring, is turned
 “ and trodden with feet; lastly the fur is rubbed
 “ against the hair with saw-dust.” — The usual
 compound for dyeing the fables at Mosco is not
 so composed. Litharge, green vitriol, nutgalls
 and alum are almost the only ingredients. The
 chinese coloured fables, which are seen in Siberia,
 are incomparably finer and more lasting than the
 russian. But both are often so artificially coloured,
 that it is with some difficulty they can be distin-
 guished from the natural. The white ice-fox is
 even at present in Mosco coloured an uncommonly
 fine black.

XIX. PHARMACY. This business is here not
 so new as some perhaps may imagine. So early
 as during the reign of tzar Borice Godunof, there-
 fore nigh two hundred years ago, there were apo-
 thekes in Russia*. Nevertheless, in respect to
 the great range of territory in the empire and its
 numerous population, there were then but few in
 the country. The principal apothekes belonging
 to the crown are: in St. Petersburg 6, Cronstadt
 1, Reval 1, Riga 1, Archangel 2, Mosco 3, Lubna
 2, Astrakhan 1, Orenburg 1, Saratof 1, Tobolsk 1,
 Smolensk 1, Ekatarinenburg 1, Kherfon 2, Khar-
 kof 1. — Private apothekes: in St. Petersburg
 6, in Mosco 5, in Riga 8, Reval 2, Dorpat 1,

* See Bachmeister's versuch ueber das naturalienkab. der
 kaiserl akad. der wissensch.

Narva 1, Vyborg 1, Yaroslaf 1, Glukhof 1, Kief 1, Kazan 1, Nishney-Novgorod 1, &c.

XX. TOBACCO-MANUFACTURE. Since the culture of this plant has been so much extended, there are also a number of establishments, where the leaves are manufactured for tobacco and snuff. In Mosco alone are four considerable works of this nature. But, as they were not reckoned properly manufactories, they were not entered in the books of the manufactory-college.

XXI. PAPER-MANUFACTORY. There are three manufactories of paper in Mosco, and two-and-twenty other in various parts of the empire. Besides these there are (even in Siberia) a few others, which have either been lately erected, or, like the livonian and ukrainian, are not registered at the college of manufactures. They in general make only common writing and printing-paper, and even then neither in sufficient quantity, nor of prime quality; accordingly a considerable quantity of paper is imported every year.

XXII. PAPER-HANGING MANUFACTURE. As these hangings are greatly used in Russia, they are therefore made in large quantities. There are several manufactories where this work is carried on to a great extent. Cere-cloths are likewise prepared at some of them. In Mosco are five of these manufactories, and their paper is of different qualities.

XXIII. PLAY-CARD MANUFACTURE. The
greatest

greatest. is at the foundling-hospital at Mosco, which likewise has the stamp-duty on those made at other places. Of these are three at Mosco and one at St. Petersburg. — Though so much paper is made in the russian empire, yet, as far as our knowledge reaches, no boxes or other things are made of papier maché.

XXIV. PRINTING-OFFICES. In St. Petersburg are printing-offices belonging to the crown, at the senate, the college of war, the academy of sciences, the mine cadet-corps; the land-cadet-corps, and the artillery-corps; in Mosco at the university, and at the senate, and for the church-character at the synod in St. Petersburg and in Mosco, and at the academy in Kief. Besides these there is one belonging likewise to the crown at Kremenetschuk (or Ekatarinofslaf) and another at Astrakhan. Private printing-offices are: in St. Petersburg 3, in Reval 2, in Riga 1, in Dorpat 1, in Oberpahlen 1, and in Mosco 1. Printing is performed in the russian, german, french, greek, slavonian and arabic languages; but mostly the three first. At all these however but little is printed, either at the expence of the crown or of occasional writings, unless of such as it may reasonably be expected will have a rapid and numerous sale. It may indeed be affirmed, that almost all the russian writings are printed at the expence of the crown, which in one way or another has furnished the money for them. It as rarely happens that

that works in foreign languages are printed in Russia at the charges of the publisher, because from the high price of the paper, the great wages of compositors and pressmen, and the distant transport of the books to the Leipzig fairs, they would not answer. The presses, however, at Riga and Reval in some degree form an exception. In short, printing and bookselling were declared some years ago by the late empress to be a free trade, which any one might follow; and it was doubtless the intention of that sagacious monarch in thus farther extending this art, to inspire her subjects with a greater love for the sciences and all useful and ornamental knowledge; but various impediments remain to be removed ere that desirable end can be fully attained. — There is nothing here peculiar in the practice of the typographical art, excepting that the compositor's upper and lower cases are both in one piece, and that the pressman's heap of white paper stands on the off-side of the press, whence he draws the sheet to him on the tympan, which when printed he brings to the bank on the near side. — The first book printed in Russia is The Acts of the Apostles, &c. bearing the date 1564. It was ten years in printing, and was executed by the printers Ivan Feodorovitch, and Pietre Timofeyef.

XXV. SAIL-CLOTH AND CORDAGE MANUFACTURE. In Russia are many large works of this kind. Some very considerable are maintained
4 by

by the crown, particularly at the admiralty at Archangel, St. Petersburg, &c. At Novgorod likewise is a large manufactory of sail-cloth, belonging to the crown. Of private works of this nature there are: in Archangel 9, one in each of these towns, Kolomna, Tambof, Yelatma, Briansk, Nishney-Novgorod, Saratof, and 11 at St. Petersburg. Besides these there are several other ropewalks; one of the most considerable is in Kaluga, belonging to the rich merchant Luginin; another is near Narva, &c.

XXVI. LINEN-MANUFACTORIES. These are very numerous, and some of them great and important. They generally confine themselves to coarse, and for the most part striped linens; next to these, table-cloths, and extremely fine ones, rich napkins, much printed linen, naboika, &c. fine linen but very little, and cambric not at all*. The finest and best russian linen, which may be compared with the fiesian and warendorf, comes from the government of Archangel, and is called gorodskoi polotno; it is likewise as broad

* However, a cambric manufactory was set up at Yamburg at the expence of the late empress. It employed the flax of the country, and the specimens that I have seen of it, says Mr. Albaun, were equal to the best flemish cambric; but it is astonishingly difficult to accustom the girls and the women to fine spinning. All the species that have been hitherto made there are consumed by the court alone; none is sold.

as the foreign, but by far not so finely bleached and got up. Besides, tolerably fine linen is made by the boors in several other parts, as at Liskova on the Volga, but not above half an arshine wide, though Peter I. so long ago as 1718, ordered that all linen should be woven as broad as the foreign. — In 1764 the export of russia linen was about 30,000 arshines*; but in the year 1784 of various sorts greatly exceeded 3 millions of arshines, and from 1758 to 1778, in 20 years 260,909,180½ arshines. In the several parts of the empire are 64 linen manufactories.

XXVII. COTTON-MANUFACTORIES. There are some very considerable; about 8 in number. One at Krasnoe-selo and another at Schluffelburg make chintzes, but mostly half-chintzes, bivoika, and common cotton; also mitkal, coarse muslin, manchester, barchent, stockings, &c.

XXVIII. SILK-MANUFACTORIES. These are not less important than numerous. There are at least 40 of them in various parts of the empire. Belonging to the foundling-hospital at Mosco is also a silk-stocking-manufactory. The oldest and still the most important and best constituted is that of M. Lazarof in the village Frenova, 60 versts from Mosco. It has generally 110 frames at work, with 500 workmen, and works up about 200 pood of raw silk per annum. The wages of the people

* Kilburger von ruff. handel.

alone come to 1500 rubles a month. It has three filatories, each of 640 reels, which are set in motion by a water-wheel; and besides a small filatory, turned by men. Here are made velvets, atlasses, gros-de-tours, taffety, gold and silver tissues, peruvians, brocades, and various kinds of fashionable stuffs, and especially very fine hangings like those of Lyons. Of the latter upwards of 10,000 arshines were put up in the new palace of the late empress at Mosco, which are of uncommon elegance. For the peruvians a loom is kept, which has only one stool and a cylinder, and the fashion is given to the stuffs by means of pegs. A man can weave five arshines in a day at it. Here, as well as at several other manufactories at Mosco and Yaroslaf, is likewise a machine at which several ribbons can be wove at the same time. — These manufactories work up persian, italian, bukharian, chinese, and some russian silk, of which they make taffety, chalons, damask, gros-de-tour, velvet, stuffs, stockings, cloths, hangings, and various kinds of half-silks.

XXIX. GOLD AND SILVER LACE MANUFACTORIES. In St. Petersburg are about five of these, where this business is carried on in the gross.

XXX. CLOTH AND STUFF MANUFACTORIES. In Russia are 56 of them, but making only coarse cloths for the army and others all of home-spun wool, — It is several centuries ago that the cloth-manufacture has been introduced into Russia,
since

since the old year books say expressly, that on the incursion of the Tartars they pillaged in 1382 the manufactories of cloth at Mosco. — Nevertheless there is still annually imported to the value of upwards of two millions of rubles in fine cloths and stuffs. — The cloth-manufactory at Yamburg was instituted by Catharine II. presently after her accession to the throne, under the direction of a M. de Valier, on account of the crown. It contains 36 looms, and has above 600 work people. By means of a machine annexed to every loom, only one man works at each. The cloths are sold at St. Petersburg at a proportionately low price. — In the territory of Orenburg and in Kazan some cloth is also made of goat's wool; for in March, when the goats begin to change their winter hair, it is the practice to comb them with large wooden combs, by which a wool is obtained, which has served them for a winter-garment, and which is so fine that it yields in no respect to the finest fur of the beaver. But the hair must be carefully picked. It is then combed on spinning-combs and the fine wool drawn out with the fingers; but which with a great store may be more advantageously done with good combs contrived for that purpose. The wool thus drawn out is laid layer-wise in flocks, is loosely wound up, and then spun like other fine wools on spindles. The heedes are particularly spun, of which night-caps, stockings, &c. may be made. But the spun-yarn of the fine

wool is wove into cloth, which to feel is as soft and fine as that made of vigogna wool; and may be employed in making hats, which turn out as fine as those of real castor. The natural colour of this wool is more or less white and bay; but takes all dyes. Only the collecting of it is somewhat difficult, as from 100. goats not much above 20 pounds of wool are obtained. — The crown-manufactory at Yamburg, and another on the estates of prince Potemkin, make also fine cloths, mostly of spanish wool. — The private manufactory at Kazan likewise makes a fine strong half-cloth of camel's wool, which is left of its natural colour.*

XXXI. CARPET-MANUFACTURE. At St. Petersburg is a carpet-manufactory belonging to the crown, and the work which it turns out is excellent. It has copied many of the finest pictures in her majesty's collection so accurately as to excite the amazement of all beholders. — Manufactories of this kind are also on the estates of the Vorontzofs in the government of Penza. Others are frequent in different parts, and even in Siberia near Tiumen, where handsome carpets are made in the persian manner, and are bought at two or three rubles the arshine.

* More circumstantial accounts of it are given by professor Georgi in his travels, tom. ii. p. 817.

XXXII. HAT-MANUFACTORIES. Of these there are very many, and a multitude of common hat-makers; the finest of their hats, however, are not remarkably good. The best are made in St. Petersburg and Mosco; but the largest fabric is at Smolensk. — Under this head must likewise be added **FELT-MAKING**, which is prosecuted to a great extent, especially in Siberia. The Tartars and Baschkits, &c. are very expert in this business. They make felts, voiloks, of such a size that the floor of a whole room may be covered with them. Many of these felts are exported. So long as forty or fifty years ago, in one year upwards of 168,500 arshines were shipped off from the port of Archangel. The best felts were then made at Kaluga.

XXXIII. LEATHER-MANUFACTURES. No trade in Russia is of so antient a date and so extended as this. The excellent yusts which are peculiar to Russia, are everywhere sufficiently known*. They have also the art of preparing several other sorts of leather of extraordinary quality. The chief products of the tanneries of this country, as before observed, are the YUSTS. In

* The principal places where, next to Mosco and Petersburg, the most yusts are prepared, are: Arsam, Kostroma, Yaroslaf, Psoove, Kazan, Vologda, Nishney-Novgorod, Vladimir, Ekatarinenburg, &c. In England they go under the general name of russia leather.

the preparation whereof they proceed in the following manner: the raw ox-hides are first laid in running water, or in large tan-pits full of water dug in the earth for that purpose, to soak for a whole week; but in summer not so long. During this time they are daily taken out of the water, and scraped at a scraping-bench or wooden horse. Having now been duly steeped, they are put into a lye, thus prepared: In other vats, likewise dug in the ground and under cover, they mix two parts of good ashes with one part of unslacked lime, in boiling water, and sink the wet hides in this lye on a grating, which being suspended by cords, can be raised or let down at pleasure. In this vat the hides are laid again for about a week, though in warm weather less, in cold perhaps even longer. The sign that they have lain long enough in the lye is, that the hair can without difficulty be rubbed off with the hand, so that none remains. If the hides, after the expiration of a week, are not in that condition, fresh ashes are put into the lye, and the skin sunk in it. But if at length the hair be sufficiently loose, the hides are entirely taken out of the lye, and all the hair scraped off on a stretching-block by means of blunt iron scrapers with two handles. The hair is washed clean and sold for domestic uses. The hides, thoroughly cleansed from hair, are suspended in vats of clean water on a running stream, where they remain three days, diligently

ligerly turning them to and fro, in order to purge them from the ashes and lye ; afterwards they are hung up and left to drain. The hides must now be scraped on the flesh side. To this end they employ either the aforesaid scraping-iron, or others sharper in various degrees. After this treatment the hides are trampled. But calves-hides have another sort of preparation, which the yust-tanners in the interior towns of the empire, who mostly practise it, call raksha. This preparation is performed with the white excrement of dogs dried, which is dissolved in boiling water, and to a hundred hides about four vedros full of excrement is the rule. If here the right proportion with the water be not found, the hides corrupt in this slime, the object whereof seems to be the complete freeing of the skin from the salts that adhere to it from the lye. The hides are left to lie twice twenty-four hours. With this is stirred a four gruel of oatmeal with warm water, and to three osmics, or eighths of a chetverik, three or four vedros of dregs of the common quas which the people make of meal and a small portion of malt, put in the thin gruel that it may quickly sour with the hides. To ten hides the tanners usually reckon forty pounds of meal *.

* A circumstantial account of the yust-tannery in Murom (which agrees in the main with what we are here describing) is given by professor Lepekhin, in the journal of his travels, tom. i. p. 24. and of the tannery of the Baschkirs, tom. ii. p. 24.

After the hides have soured, which is done in large vats, they are laid in other vats and well steeped for two or three days in a strong tan-juice, sok, thoroughly boiled from good bark. When this is done they are brought straight to the tan. In the tan-pits, in which often some hundreds of hides are lying, is poured half water and half tan, or water boiled with tan, and a grating is hung in with cords, having one hide after the other spread upon it, thick strewed with good fine-pound-ed tan, and the grating constantly let deeper into the pit, till it be nearly full; yet so that the tan-liquor is always above the hides, which are then again sprinkled over with tan. In this tan the hides continue to lie a week; those of full-grown animals longer. On being taken out, they are washed and trampled on, which two workmen in a summer's day can perform with three hundred hides. The next day they are laid, in the manner above described, in fresh tan. Thus they generally get four times successively fresh tan, and are every time rinsed clean. In the last tan they lie three weeks or longer, are then finally washed, hung up, and, when they have tolerably drained, delivered to those workmen whose business it is in particular workshops to dye, dress, and wax the yufis; and to deliver the goods finished. It is to be observed, that the russian yuft-tanners seldom use oak-tan, and never willingly. The choicest and best tan is that of the tschernotal, as they call

call it, or the black willow, and also the young bark peeled off from other shrubby willows, which are collected by the boors, dried in bundles, and brought in cart-loads to market. To ten hides the tanners compute one and a half fathom of these bundles of willow bark as they are laid one upon another for sale, through all the tans. It must not however be imagined that the excellence of the russian yufts depends on this; for in Siberia, where are no oaks, and but few willows of any size, they tan yufts with only birch-bark, which are not much worse than the russian. The bark is made small by either ordinary tan-mills, turned by horses or by water; or the tanner himself in many towns where are no mills, causes it, at unnecessary expence and labour, to be pounded in wooden mortars or excavated blocks, with pestles, almost like those in the tan-mills, by day-labourers. — The dyeing of the yufts is performed in two ways and of two colours. The commonest and most natural custom of giving the colour to the hides, is, by sewing them together in pairs, the hair-side inwards, while they are yet moist, round the edges, with rushes or stripes of bark, thus forming them into a bag or sack; into this sack the colour is put, the sack well shook and the superfluous dye let to run out, whereupon the skins are dried. From this method of dyeing them, it seems to proceed that the yufts are called and taken by pairs. The

other process, whereby much trouble, time, and colour are saved, and the edges of the skin entirely preserved, is the following: Each skin is hung upon a horse over a long trough, so that the hair side, which must be stained, appears outwards, pouring the dye upon it out of the dye-kettle, till the whole skin is dyed. The two colours given to the yufts are red and black. The red dye is thus prepared: Pound brazil-wood (sandal) in the pounding-mill, or with hand-pestles, as fine as the tan, and boil it in kettles. Previous to the dyeing, steep the skins in alum-water. It is calculated, that to each small yuft-skin a half, and to a large one a whole pound of logwood is put. But the latter are mostly coloured black. To a hundred yufts to be dyed red, four pounds of alum is sufficient. For dyeing black the brazil-wood is likewise used; but in the red dye to a hundred skins three pounds of good iron vitriol is dissolved. After the first tincture the skins are dried, and afterwards on tables done over again with the same dye and rolled up, that they may thoroughly imbibe the dye. For heightening the colour this tincture is sometimes thrice repeated. When the skins are now tolerably dried, by hanging, that the colour may not fade, with the flesh side outwards, the yufts, still somewhat moist, are smeared over on tables that have ledges. There was a time when it was commanded by authority to use nothing but dolphin
and

and seal-blubber for smearing them ; but by that the yufts are harsher and have not that yuft-smell, which foreigners prize so much, unless the birch-tar, deggot, prepared in Russia, at least be mixed with it. At present this birch-tar alone is used for smearing. This done, the skins are cleansed from any impurities that may remain, and are sent to the dressing-house, where skilful workmen scrape them first with scraping-irons having two handles with the edge cross-wise on a stretching-bench, that a soft thin leather remains with a clear glossy surface free from all impurities. Other workmen then take the clean-scraped yufts on large clean tables, sprinkle them on the flesh-side with a gentle shower of fresh water from their mouths, and lay them slightly rolled up to moisten. This done, the skins are taken separately one after another, folded together, and worked and calendered in all directions to make them soft and pliant. They are then curried with a kind of wooden curry-comb, with sharp irons fixed in leathers, like a card for carding wool, the skin being folded with the hair side outwards, by which the whole surface of the yufts acquire the cross strokes or trellis-like marks they are always seen to have*. Some work the skins with

* Others think this chequered impression is communicated by a steel cylinder, a foot long and three inches in diameter, wound round with a multitude of wires, and in weight 300 or 400 pounds. Vide Beausobre, *finanzw.* tom. i. p. 246.

the hands first dry, not sprinkling them till they are mangled with the card. Lastly, those skins which are too harsh and stiff to the feeling, are more or less sprinkled with linseed oil, and thus are ready for the merchant*.

Another tannery of great importance is that of the *SAFFIAN*, or maroquin, which is carried on to a great extent in several towns of the empire, but particularly in Astrakhan, and in which they proceed in this manner: The saffians are dyed in Astrakhan of three colours, red, yellow, and black; but only in the two first colours, and especially in the red is the astrakhan saffian-work famous, and next to the turkish excelling all others. Whereas the black saffians which are there prepared, are not better than those wrought in Kazan or elsewhere in Russia; and for that reason in Astrakhan no more are made than suffice for the demands of the town: while, on the other hand, great quantities of red and yellow saffians go to all parts of Russia and out of the country, and likewise form a considerable article in the asiatic commerce.

No other skins are taken for making saffians than those of bucks and goats, and the preparation for each of the above-mentioned favourite colours is somewhat different: the red saffians demanding more labour and expence than the yel-

* Pallas, Peterfb. journ. tom. i. p. 61.

low; they are, therefore, also dearer in price. The treatment of the red sassians is usually in the following order: the raw hides are first laid in large vats, and have river water poured upon them, in which they are left to soak for three or four times twenty-four hours. They are then taken out, the water is drained and squeezed from each skin, and are scraped one by one on the stretching-bank with scraping-irons, uraki, quite gently on the flesh side, in order to take away the grosser impurities, but principally for opening the skin and to qualify it for the ensuing operation.

They now proceed to make the hair fall clean off chiefly by the application of lime. To a hundred hides is stirred in about half a bushel of unslacked lime in vats with river water, and the hides are laid in so as that the lime may as much as possible be equally distributed over all of them. The astrakhan Tartars let the hides lie in this lime-pit frequently three weeks; but it is well known, that their sassians are so harsh and liable to crack, and even scorched by it, that they are fit for nothing, and can only impose upon an inexperienced purchaser. They then take out the skins, wash them and carefully scrape off the hair, now become loose, with wooden scrapers. It often happens, that the hair is not perfectly loosened by the first lime-lye, but that many tender stubbles and small hairs are left remaining. In this case the hides must be put into fresh lime-

lime-lye, and be left perhaps two weeks in it; the hair then comes off, and the hair side of the skin gets a green and very white appearance, but the substance is then also very soft, and the saffians, by this corrosion of the lime, are very little durable in comparison of other kinds of leather.

The method now for taking the lime again out of the hides, is the second treatment with dog-excrement or white gentian, which is carefully collected for this purpose. This excrement, which is indispensably necessary, is pounded, put into a narrow not very large vat, warm water poured upon it, the mass thoroughly stirred, and the cleansed hides are put with it into another vat, so as that the dissolved album grecum is spread and insinuated over and between every skin. In these ingredients the skins must lie only twenty-four hours, or if the quantity of album grecum prove not rich, somewhat longer. The proportion here to be observed cannot be accurately ascertained; for the saffian-makers are guided generally by eye-measure, and observe only that the water be very thick and turbid, and consequently acrid enough. The hides come out of this corrosive much softer and thinner than they were, and are now freed from the force of the lime; but no time must be lost in endeavouring to extract the corrosive likewise, that the hide may not be even more ruined by it than by the lime. They are generally very careful that the hides lie not too long

long in this corrosive, which they judge of by their eye from the pliancy and suppleness of them. As soon as the skins are lifted out, the unclean moisture is carefully and forcibly pressed out, and they are laid without loss of time in a vat, wherein wheat bran is stirred to a tolerably thick gruel with warm water, in this they lie again about thrice twenty-four hours, whereby all the former defects are completely remedied, and the substance of the skin is softer and mellow. — All these particulars are in some measure of no other service than to bring off the hair thoroughly clean from the skin.

Now follows the proper preparation of the skins taken out of the wheat-bran. This is done chiefly by honey. To eighty hides they take about twenty-five pounds of raw honey, boil it in a kettle, pour as much water to it as is necessary for giving it a due consistence, and stir it for a pretty long time boiling on the fire. They then let the kettle cool, till they can but just bear the hand in it, and then pour the still-hot honey-water on the hides lying singly in little trays by ladle-fulls till they have thoroughly imbibed the honey-water. When all the skins are duly drenched, they are thrown into a dry vat all together, laying at top a board with weights upon it, and covering the whole vat with felt, carpets, or furs, that the vapour during the fermentation may not escape; and in this manner the skins must ferment
once

once more thrice twenty-four hours. By this means they acquire the grain. From the honey-vat they are rinsed clean in lukewarm water, wrung as dry as possible, and steeped immediately in a moderately strong pickle or brine made of common salt, in which they must be left five or six days. This time being elapsed the skins are taken out of the pickle and hung upon clean poles that the brine may drain out, as it would be thought injurious to squeeze it out with the hands. This done, the skins have received their whole preparation, and may now be dyed red, but not yellow; because for the yellow saffians, as was said before, the preparation is of another kind.

For giving the red saffians the colour, nothing is used but cochennille, or as the Tartars call it kirmis, and that in the following method: first, they boil a quantity of the herb *falsola ericoides*, by the Tartars called tschagan, plentifully growing on the arid Astrakhan salt-steppes. To about four russian vedros of water is put of this dried herb somewhat less than a pound, and it is set to boil for a whole hour, whereby the water acquires a dark-greenish colour, but betrays no acrimony to the taste. The saffian maker only takes care that the water be not too deeply tinged, and that when dropped on the thumb-nail shews only a scarce perceptible green; and in case it have adopted too many particles of the colour, it is drawn off, and fresh water put, in which the herb must

must boil again, till the decoction has received the due degree of saturation. The herb is then with a scoop taken clean out of the kettle, and then the previously nicely powdered cochénille thrown into a kettle of four russian vedros to about half a pound, well stirred and fresh fire added, in which great attention must be paid, that the red scum, which arises from boiling, does not boil over, therefore constantly some is taken and again poured in, in order by this refrigeration to prevent the over-boiling and to allay the foam. After boiling for about an hour and a half, the water has obtained a strong tincture; but, as much of it is boiled away, the kettle is filled up again with the remaining decoction of the herb tschagan, and the thus attenuated colour boiled afresh, till it is seen that the cochénille is perfectly dissolved and the colour become thoroughly bright. Upon this, to the whole kettle is put about two lote of pounded and burnt alum into the dye, with which it is to boil about a quarter of an hour, and then the fire is taken from under the kettle, leaving only some hot embers, that the dye may retain as much heat as the hand can but just bear. This done, the skins prepared for dyeing are taken in hand, the dye poured by ladles into trays, one skin folded together after another with the hair side outwards, and then are worked in their portion of dye so long, till they have uniformly absorbed all the dyeing particles, and only somewhat of a pale moisture remains.

remains. The leathers being thus for the first time stained are quickly squeezed out, hung up singly across poles, and when they are all done, they are directly taken for the second time and imbued in the same manner with dye, and this treatment is repeated for the third and the fourth time; so that each skin gets four ladles of the dye. From the fourth dye the skins are no more pressed out, but hung up entirely wet, to be ventilated upon poles.

After the dye the skins are once more curried with the leaves of the tan-tree*, which the Armenians call belgè. The crushed or pounded dry leaves, which the astrakhan saffian-makers get from the Terek, are stirred in broad troughs to a thick gruel with river water, and the coloured skins laid in it, between each of them leaving a sufficiency of the leaf-ooze; the tanner then goes barefoot into the troughs upon the skins lying on one another. In this tan or quas, as the workmen call it, the saffians lie eight days and nights, adding fresh tan every other day; so that four tans are necessary.

Here it must be observed that some Armenians who prepare saffians, for enhancing the quality of the red colour of their saffians, to half a pound of cochénille add two lote or rather more of sorrel (or lutor or loter as they call it) in the dye-kettle, but it is usually omitted in Astrakhan on account of

* *Rhus cotinus*.

its high price ; for which reason the aftrakhan faffians are excelled by the turkish in beauty of colour. Secondly, it is to be known, that instead of the leaves of the tan-tree bruised nut-galls are held to be still more serviceable for giving the faffians the tan. By this means the colour is so durable as never to pass away but with the leather ; whereas the faffians prepared with the tan-tree begin soon to be discoloured. But the nut-galls are likewise too dear in Aftrakhan to be customarily used by the faffian-makers. The kazan Tartars colour their faffians with red wood and tan them with the shrub *uva ursi*, but it makes the worst faffians of all, as they presently fade.

When the faffians are lifted out of the tan, still the last work remains. They are first left some time in the air to dry, they are afterwards scraped on the stretch-bank with sharp scrapers on the flesh-side quite smooth and clean, then washed in running water, each skin duly stretched with pegs all round the edges, and thus left till they are dry.

The skins must now be smoothed on the hair-side with a wooden instrument for that purpose, and lastly they are laid on a thick felt, where, with an iron heckle that has blunt points, those little pittings, which the faffians are generally seen to have, are impressed on the same side. And thus they are ready for sale, without being smeared with linseed-oil as is mentioned in Gmelin's travels, which would infallibly spoil them.

The yellow saffians are little made in Astrakhan, as the demand for them is much less, and there are but few saffian-makers who know much of the matter. The dye which they make use of for this purpose is of the berries of a sort of rhamnus (perhaps lycioides) which are brought from Persia under the name of uloscharr, and usually bought for six to nine rubles the pood. The kazan Tartars colour their ordinary yellow saffians with the flowers of the yellow camomile*, which they gather under the name sare tschetschiak, i. e. yellow-flower.

In preparing the yellow saffians, they observe in Astrakhan the following difference of treatment:

1. They make no use whatever of honey in the preparation.
2. They never at all put the hides into the salt brine.
3. Instead of the honey-preparation and the pickling, they lay the hides before the dyeing, in the foregoing manner, in the tan of the leaves of the kitzliar tan-tree, leaving them in it eight days.
4. For preparing the dye they have no need of the herb tichagan, but the berries alone are boiled in clear water, of which to four russian vedros of water about ten pounds are requisite, and heighten the colour afterwards with three lotes of alum to every pound of berries. The dyeing is performed in the same manner as has been related with the red, and after the dyeing there is

* *Anthemis tinctoria.*

no need to lay the saffians in the tan, as having before received it. Nothing more is necessary than to scrape them clean, to work them thoroughly, to polish and to ornament them. The yellow saffians usually are sold at one ruble 20 kopeeks; but the red at somewhat more on account of the dearth of the dye, generally one ruble 80 kopeeks*.

SHAGREEN, which is likewise prepared in Astrakhan, mostly by Tartars and Armenians, is also a very valuable kind of leather, the preparation whereof is not in use with the other nations of Europe. The process is as follows:

For making shagreen, horse-hides and ass-hides are taken; but properly no more than the hinder back-piece are useful for this purpose, which is cut off immediately above the tail in nearly a semicircular form about an arshine and a half upon the crupper, and rather less than an arshine along the back. The rest of the horse-hide, from long experience being reckoned unfit for shagreen-making, is thrown away. The back pieces thus cut out are laid in a vat filled with clean water, and left in it several days successively, till they are thoroughly soaked and the hair comes freely off. Then the hides are taken one by one out of the vat, spread against a board set slanting

* Pallas, Petersburg journal, tom. vi. p. 20. Concerning the saffian-tannery in Kazan see Georgi's travels, tom. ii. p. 816.

againſt the wall, one corner of it reaching over the edge of the board where it is faſtened; and in this poſition the hair is ſcraped off with a blunt ſcraper, urak, and with the hair the upper pellicle; and the cleaned ſkin is laid again in clean water to ſoften. This done, they take it a ſecond time out, ſpread one piece after another in the manner before deſcribed, ſcrape now the fleſh-side with the ſame ſcraping-iron, and the whole ſkin cleaned again on the hair-side with great care, ſo that nothing now remains of the ſoftened ſkin but the clean finewy web which ſerves for parchment, conſiſting of thick faſciculi of mellow fibres, reſembling a hog's bladder ſoftened in water. After this preparation they immediately take in hand certain frames, pæltzi, compoſed of a ſtrait piece and a ſemicircular bow, forming therefore nearly the ſhape of the ſkin, which is ſtretched in it with ſtrings as even and uniform as poſſible; and during this operation is ſprinkled between whiles with fair water, that no part of it can dry and occaſion an unequal extenſion. In like manner they finally wet them when all the ſtock of ſkins are ſtretched, and carry all the thoroughly wetted ſkins into the work-room. There the frames are one by one laid flat on the floor, ſo that the fleſh-side of the ſtretched ſkins is turned undermoſt. The other ſide is now thick ſtrewed over with the black, very ſmooth, and hard ſeeds of a ſpecies of the herb

goose-foot, or the greater orach* which the Tartars call alabuta, and which grows in great abundance and almost to man's height about the southern Volga in farm-yards and gardens; and that these may make a strong impression on the skin, a felt is spread over them, and the seeds trod in with the feet, by which means they are impressed deeply into the very yielding skins. Then, without shaking off these seeds, the frames are carried again into the open air, and set leaning against a fence or a wall to dry, in such manner that the sides covered with the seeds face the wall and cannot be shone on by the sun. In this situation the stretched skins must dry for several days successively in the sun, till no trace of moisture is perceptible in them, and they may be taken out of the frames. Then, when the impressed seeds are beaten off from the hair-side, it appears full of little pits and roughnesses, and has got that impression which the grain of the shagreen ought to produce when the true polish has been given to the skin by art, and the lye now to be mentioned has been used previous to the staining.

The polish is done on a stretching-bench or a board on treffels, furnished with a small iron hook and covered with some thick felts or voiloks of sheep's wool, on which the dried shagreen-skin may lie soft. This is hung in the middle, by a

* *Chenopodium album*,

hole which has been occasioned by the string in the stretching, to the hook, and fastened at the end by a string with a weight or a stone, by means whereof the skin is allowed to move to and fro, but cannot easily be shoved out of its proper situation. This done, the polishing or rasping is performed by two several instruments: the first is called by the Tartars tokar, being an iron, crooked at one end like a hook and sharpened. With this the surface of the shagreen is scraped pretty sharply, in order to remove the most prominent rugosities, which from the horny hardness of the dried skin is no easy matter, and in which great care must be taken not to shave away too deeply the impressions of the alabuta-seeds, of which there is imminent danger if the iron be kept too sharp. As the blade of this iron is very narrow, it will make the shagreen rather uneven, and therefore after it, must be used the other scraper or urak, whereby the whole surface acquires a perfect equality, and only a slight impression remains of the seeds, exactly as it ought to be. After all these operations the shagreen is laid again in water, partly for rendering it supple and partly to make the elevated grain appear: for the seeds having caused pits in the surface of the skin, the interstices of these pits have lost their prominent substance by the polishing or shaving, and now the points that were pressed down, having lost nothing of their substance, spring up above the shaved places,

places, and thus form the grain of the shagreen. To this end the pieces of shagreen are left to soften twice 24 hours in water; and are floated several times afterwards in a strong and hot lye, which is obtained by boiling from an alkalescent saline earth, schora, found about Astrakhan. From this lye the skins are bundled warm one on another, and thus suffered to lie some hours, whereby they swell up and are softened in an extraordinary manner. Again, they are left to lie 24 hours in a moderately strong brine of common salt, by which they are rendered fine and white, and excellently adapted to receive any agreeable colour, which the workman hastens to give them as soon as they are come out of the pickle. The colour most commonly communicated to the fine shagreen, is the sea-green as the most beautiful. But the expert shagreen-makers have the art of making also black, red, blue, and even white shagreen.

For the green dye nothing more is necessary than fine copper filings and sal-ammoniac. As much of the latter is melted in hot water as the water will admit. With this sal-ammoniac-water the shagreen skins still moist from the brine are brushed over on the ungrained flesh-side, and when they are thoroughly wetted, a thick layer of copper-filings is strewed over them, the skins doubled together, so that the strewed side lies inwards, then each being rolled apart in a little felt or voilok, they lay all these rolls orderly on one another,

and press them equally by a considerable and uniformly pressing weight, under which they must lie 24 hours. In this time the sal-ammoniac-water dissolves enough of the cuprous particles for penetrating the skin with an agreeable sea-green colour; and though it be not strong enough the first time, yet a second layer of copper-dust wetted with sal-ammoniac water, with which the skins must lie again 24 hours will be quite sufficient for staining them thoroughly; when they may be properly cleaned, spread out, and dried. For giving the blue colour to shagreen they use only indigo, which to this end is not so prepared as for the silk and cotton dyers, but entirely without bones, only by strenuous friction, is mingled and dissolved with the other ingredients. They put about two pound of finely grated indigo in the kettle, pour cold water on it and stir it till the dye begins to dissolve. They next dissolve in it five pounds of pounded alakar, which is a sort of barilla or raw soda-salt, burnt by the Armenians of Kitzliar and a worse kind by the Kalmuks, adding two pounds of lime and one pound of virgin honey, all thoroughly stirred and set in the sun for several days, during which the stirring is frequently repeated. The shagreen skins which are to be made blue must be put only in the natrous lye, schora, but not in the brine made of common salt. They are again folded up wet, and sewed close together round the edges with the flesh-side turned inwards
and

the shagreened hair-side outwards, upon which they are three times dipped in succession in an old store-dye kettle, at every time pressing out the superfluous dye; lastly, they are all brought into fresh dye, which must not be pressed out, and with which the skin is hung up in the shade to dry; they are for the last time cleaned, ornamented on the edges, and reduced to order. For the black shagreen they employ nutgalls and vitriol in the following manner: the skins still moist with the brine are thick strewed with finely powdered nutgalls, folded together and laid one on another 24 hours. In the meantime a new lye of bitter earth-salts or schora is boiled and poured hot in little troughs or trays. In this lye each skin is waved to and fro several times, is again strewed with pulverized nutgalls and again laid in heaps for some time, that the virtue of the galls may thoroughly penetrate the skins, which are then suffered to dry, and are beat out to clear them from the galls. When this is done, the skin is smeared on the shagreen-side with mutton suet, and laid a little in the sun, that it may absorb the fat. It is the custom likewise with the shagreen-makers to roll up each skin apart, and to squeeze and press it against some solid body, in order to promote the absorption of the unctuous particles. The surplus is again scraped off with a blunt wooden scraper. This being done, and the skin having lain a little while, a sufficient quantity of iron-vitriol is dissolved

folded in water, with which the shagreen is rubbed on both sides, whereby it soon acquires a beautiful black colour: and now the edges and other defective parts are dressed. To obtain white shagreen the skin must first be steeped in strong alum-water on the shagreened side. Having imbibed this, the skin is well rubbed on both sides with a paste of wheaten flour, and left to dry with it; then all the paste is washed away with alum-water, and the skin set to dry completely in the sun. As soon as the skins are dry, they are gently smeared over with clean melted mutton fat, leaving them in the sun to imbibe it, and are worked and pressed with the hands to promote this effect. Afterwards the skins are fastened one by one on the above-mentioned stretching-bench, warm water is poured over it, and the superfluous fat scraped off with obtuse wooden instruments, to which the warm water just poured on has much assisted. By this process the shagreen receives a fine white colour, and needs only in conclusion to be dressed and rubbed. This whiteness, however, is given to the shagreen, not so much that it may continue in that state, but in order to impart to it a beautiful high red hue, as this end could not be obtained to such perfection without that preparation. But the shagreens intended to be stained red must not be brought out of the natrous bitter salt lye into the brine, but must be made white in the manner above described, and afterwards supplied with

with the brine, in which they are left to lie about 24 hours, or less, from the dye. The dye is made with cochénille or kirmis as the Tartars call it. The operation is begun by boiling for a full hour about a pound of the dried herb tschagan, which grows plentifully on the salt steppes about Astrakhan, and is a sort of kali*, in a kettle large enough to contain about four common vedros of water, whereby the water acquires a greenish colour. The herb is then taken out and about half a pound of grated cochénille put into the kettle, with which the above decoction must boil another full hour, diligently stirring it on the fire that the kettle may not boil over. Lastly, to this are added 15 or 20 grains of the material which the dyers call lutter (perhaps orpiment), let the dye boil a little more, and then take the fire from under the kettle. Then the skins taken out of the brine are laid separately in trays, pouring the dye upon them four times, rubbing it in with the hands, that it may be equally spread and imbibed, pressing it out every time; which done, they are ready for drying and ornamenting, and sell much dearer than the others†.

The several nations dwelling in Siberia employ also various methods in the preparation of leather. The Kalmuks, for example, tan their leather with the dregs of their kumis or with sour milk, smoke

* *Salsola ericoides*.

† Pallas, neue Nord. Beytr. tom. i. p. 325.

it a little, and afterwards rub it with scraped chalk. But the most laborious and ingenious of their productions are the **LEATHER VESSELS** which they make in the following manner: the hides, as they come out of the water, are spread in the sun; then the women who are skilled in the business proceed to cut out pieces of the shapes necessary for the vessel to be made, sewing them together with the sinews of animals, and then drying them well in the smoke of a fire. In this manner they prepare not only vessels with large mouths to which they give the form with their hands as the skin is drying, but also big-bellied leathern bottles for holding the kumiss, and saddle-flasks with a narrow neck, which for giving them their shape, they keep incessantly blowing up with great patience, at first over the fire, and then filling them with sand or ashes, and ornament them on the outside with a variety of strokes and lines. They even have the art of making large leathern tea-pots with a narrow spout, shaped like those in common use with us, in a very ingenious manner. In order to prevent the leather from becoming flaccid and likewise dirty by the hot water, these pots are smoaked more strongly and for a longer time; an operation which lasts for several days, till at last they are as transparent as horn and almost incorruptible. There are of the foregoing leathern bottles that hold five or six runlets*. — All kinds of good leather is

* Pallas, travels, tom. i. p. 321.

likewise

likewise prepared in various parts of Russia; and the white-tanned leather made at Mosco from elkskins, buckskins, goatskins, &c. is very much esteemed. —The principal skins that are tanned into white-leather, are: sea-lions*, sea-bears†, sea-otters‡, red§, cross and black foxes, steppe-foxes||, lynxes, rock-cats, blue house-cats, black cats, fish-otters, and little otters♁, gluttons, martens, itiffes, fables, ermines, snow-weazles, red weazles, white and grey hares, red and black moles, grey squirrels, black squirrels, striped squirrels♂, ziesel-mice, fine curley black kirghisian lambskins§, crimean grey lambskins, &c.

XXXIV. WAX-BLEACHING. What a great quantity of wax is annually produced in Russia is well-known: there are however but few establishments for bleaching the raw wax. Most of it is exported in its natural state, and partly consumed in the country. Dmitri Andrèef indeed set up a wax-bleachery at Mosco; and there is one at Petersburg on the Petrofskoi ostroff and another on the Petersburg-side.

XXXV. CABINET-MAKING and COACH-MAKING. These are here introduced merely for the sake of an opportunity for mentioning that the Russians have made very great progress in these mechanical arts; the extraordinary number

* Vuschka.

† Morskoi-kot.

‡ Morskoi-bober

§ White, blue pestzi.

|| Korsaki.

♁ Norka.

♂ Burunduki.

§ Baranki.

of

of coaches and chariots built at St. Petersburg, Mosco, Kazan, and even in Siberia, make no small parade; and in the durability and elegance of the workmanship they visibly improve from year to year. The russian joinery and cabinet work is always at least one third cheaper than that done at St. Petersburg or Mosco by german mechanics. What the Russians fail most in, in regard to these works, is the fine varnishing and polishing which art however is of late years pretty nearly attained. — In Tobolsk are made japanned articles in the chinese taste, and truly elegant.

XXXVI. GLASS-HOUSES. Of these here are not a few; yet not sufficient for supplying the home consumption, and therefore every year considerable plackages of glass, bottles, &c. are imported. — Glass houses are in the governments of Vladimir, Riazan, Tambof, Kazan, Pensa, Mosco, Vologda, Archangel, Petersburg, and others; in Livonia, Little and White Russia, and about six in Siberia. In the neighbourhood of Mosco alone are five, and in St. Petersburg is a very large concern of this kind lately belonging to prince Potemkin, and another not far from Schlusfelburg.

XXXVII. PLATE-GLASS MANUFACTORIES. Near Petersburg is one belonging to the crown, and another to a private proprietor. The former was established during the reign of the empress Elizabeth, and works only for the court.

XXXVIII.

XXXVIII. STONE-CUTTING. For this purpose are three works maintained at the expence of the crown: One of them situate two versts from Peterhof, another in Ekatarinenburg, in the government of Perme, and the third at the quarries of Loktevsk in the province of Kolhyvan. At all the three the cutting-mills are turned by water. At Peterhof are cut agates, porphyry, jasper, garnets, amethysts, &c. which come partly from Siberia, partly from the mountains of Olonetz, and some from abroad. At Ekatarinenburg are made mostly on the crown's account, small vases, chiefly of amethyst, jasper, garnet, quartz, marbles, &c. and the master artists there also cut a variety of trinkets and other trifles for sale, such as sleeve-buttons, rings, hair-pins, ear-rings, bracelets, crosses, seals, snuff-boxes, cane-heads, knife-handles, &c. But at Loktevsk are cut very large vases of porphyry and jasper, some of them two arshines in height, likewise pedestals weighing 300 pood, table-slabs, chimney-pieces, &c. Both the stone and the workmanship are here equally elegant. — At all three of them partly foreign, but at Loktevsk mostly domestic emery is used; and the greater part of the tripoli is of that found in Siberia. The numerous architectural pieces in marble that are employed in the new magnificent buildings at St. Petersburg, are mostly wrought in Finland, in St. Petersburg, and at Ekatarinenburg, where they are also split and polished.

XXXIX. EARTHEN-WARE MANUFACTORIES.

Of these there is a considerable one near St. Petersburg conducted on the crown's account; and two belonging to private proprietors are at Mosco. — Black earthen pans are in general use throughout Russia, and are made at several places; but glazed vessels are rare, though in many parts there is abundance of good clays. I shall just mention a few places where a great deal of earthen-ware is made: Constantinova on the Kliasma, Arat on the Piana, and Vassillieva on the Volga, &c. The ware made at Mosco is not durable; and the same may be said of the cream-coloured stone-ware which is designed to imitate the english, but without the desired effect. Another fabric of this kind, which produces a tolerable commodity, is at Reval.

XL. PORCELAIN MANUFACTORIES. Russia has at present three. The grand imperial manufactory at St. Petersburg, that belonging to M. Volkof at Savsk, and that set up by our countryman Mr. Henry Gardner at Dmitrof, with a capital of 50,000 rubles, in 1766. That at Petersburg works chiefly for the court, costs annually above 15,000 rubles and has 400 work-people belonging to it. Their ware has been gradually improving, and not till about 15 years ago has it been of eminent quality and beauty; the latter is to be particularly understood of the elegant modelling of the pieces in groups. But it must still yield the palm in regard to whiteness, durability, and painting, to many of the manufactories abroad

abroad. That at Petersburg formerly obtained its clay from the uralian mountains, but at present it is got from the Ukraine, whence also Mr. Gardner fetches it. The quartz is brought from the mountains of Olonetz. The produce of Mr. Gardner's manufactory comes at present tolerably well into commerce, and he has even made a complete service for the court: his porcelain is cheap, has a pretty white glazing, but is not particularly substantial, and the painting will admit of improvement. — None of these manufactories have succeeded in imitating, either in quality or cheapness, the blue saxon porcelain which is in such general use.

XLI. PITCH-DRAWING. This business is generally prosecuted by the boors in all the regions where there are large forests, particularly in Siberia. It is not only in the empire itself that a great quantity of it is consumed, as all machines, carriages, &c. are greased with it instead of coom or hog's lard, and there is also a great consumption of it in the tanneries; but much of it is besides exported. What is principally used by the tanners is the birch-pitch, which is prepared in the following manner: the boors peel off from the stems of full-grown birch-trees the outward tender, white and resinous bark, as high as they are able to reach with a sharp broad knife fixed to a shaft, in the form of a lance. This bark being collected in heaps they put it together in

large pits, generally dug in a triangular shape in the clayey soil, five or six arshines wide and four or five arshines deep. At the bottom of these pits a large wooden vessel is set, having a wooden cover with an aperture in the middle and channels cut in it, and done over with clay as well as the whole lower part of the pit. — In the same kind of pits likewise pitch is drawn from pine roots in regions where they abound. — In drawing the birch-oil, they put the quantity of birch-bark in such manner in the pit as to lie in close high heaps, they then set it alight, and when it is thoroughly burnt so that no more smoke ascends from it, they cover all with earth and leave it to exude. In woody regions; for instance, on the Kamma, where the boors trade in birch-oil, monstrous large pits are made, and to the space beneath the cover a passage is practised in the ground into which the people can creep and set vessels under the opening of the cover, which when filled with the oil distilled per descensum, are changed. Where great quantities of this oil are drawn, it is poured together in large pits lined with clay, or into vats, and when it has deposed its sooty dregs, the upper clear oil is drawn off, which proves as pure as brownish petroleum, and is sold about the country under the name of *retschnoi-dogt*. In spacious birch-forests where are great numbers of windfalls, they collect the white, clean, remaining resinous bark of the birch, which after all the wood with
eg. 51.
the

the inner bark is changed into dust and rottenness, lies still like an entire tree, or large branches broken from the trunks, remaining on the ground a perfect tube: and from this pure bark is obtained a clear oil almost totally free from all impurities*.

XLII. CHARCOAL KILNS. At all the Siberian mines, as well those belonging to the crown as to private persons, and even some in Russia, the timber for making charcoal, is felled by crown boors, inrolled to the works, who are obliged to perform it for their head-money (170 kopecks). Formerly they likewise made the charcoal; but since 1779 this is abrogated in such manner, that though the boors still make it under the inspection of an officer, yet they must be particularly paid for it. According to the difference of the districts they are paid by the kiln, from 7 to 16 rubles, and even more. It is universally charred in stacks. Each stack consists of 20 square fathoms of wood, and should yield of pine 75, of fir 64, and of birch and aspen wood 51 or 52 baskets of charcoal, each basket being reckoned at about 20 pood. Most of the charcoal is of pine and fir, about Nertschinsk also of larch, and in a few Russian districts of oak. Such a basket of coals costs now at the mines in Siberia 40 to 100 kopecks.

* Pet. Journ. tom. ii. p. 69. 1782. Mr. Lepekhin has described the preparation of the birch-oil and pitch in a manner very circumstantial and highly instructive to technologists. See his journal, part 4. p. 329.

and upwards; whereas five-and-twenty years ago it was only at about half that price, and in 1724 at Ekatarinenburg it was had for no more than 10 kopecks.

XLIII. SULPHUR WORKS. There were several of these formerly on the borders of the Volga and the Sok, which, I know not wherefore, have been suffered to go to ruin. Foreign sulphur is imported, though the materials of it abound in the country; and, for instance, in Nertschinsk there is a whole mountain of native sulphur.

XLIV. POWDER MILLS. In the service of the artillery are some considerable ones at St. Petersburg, Mosco, Kazan, &c. Those at Mosco produce yearly near 6000 pood, the pood at five rubles. Under Peter I. the pood of powder stood in no more than one ruble 60 kopecks. There are also some powder works belonging to private owners, as at Kupovna on the Kliasma, &c.

XLV. IRON FOUNDERIES. Almost at every iron mine, where there is a forge, cast-iron ware is prepared in clay and sand. Various sorts of pans, pots, kettles, and other domestic utensils, as also such as are wanted at the mines and manufactories. At almost all the mines, particularly at those belonging to the crown in Siberia and at Olonetz, they cast cannons and other implements of artillery. At Petrozavodsk, in the government of Olonetz, is a grand cannon foundery under the management of Charles Gascoigne esq. at a salary of
of

of 30,000 rubles per annum, where iron cannons are cast of excellent workmanship by means of a cupola-furnace. The principal founts hitherto produced by the Siberian, are some masterly ballustrades and railing, with a few statues cast at the foundery of M. Demidof.

XLVI. IRON WORKS. Here are meant all manufactories where raw iron is wrought into malleable iron and various instruments and utensils. Of these are * : — **BAR HAMMERS**, that are connected with every forge. A great majority of the iron here consists in thick bars, whereby the works reap infinite advantage, as many of them can be made at less expence of trouble, art, money, and people. Indeed several sorted-irons are made, but proportionably in small quantities, e. gr. quadrangular bar-iron and thin wheel-iron or strakes. There are also, though not many, rollers and shears for cutting nail-iron. — **STEEL HAMMERS**. Though there has been long in Russia at several works what is called uklad or raw steel, or even perhaps refined steel for the use of their own shops made merely of old iron, yet not composed, as has sometimes been said, of half raw iron and half bar iron. “ For obtaining true

* A very curious article produced by the Russian workmen are the little bullets which are made in the village Pavlovsk on the Volga. They are no bigger than a pea, and cost in Strahlenberg's time only half a ruble per dozen. At present one of them costs as much.

“steel,” it has been advanced, “they forge together
 “ the bar-iron with an equal weight of raw iron,
 “ without cooling the raw iron or remelting it,
 “ bond it together if it be straight, forge it again,
 “ and repeat this three or four times.” Whoever
 knows any thing of the matter, is sensible that
 steel is not to be made in this way. A company
 of Frenchmen, and some others, attempted some
 years ago to make cemented steel of Siberian bar-
 iron. These works, however, came to nothing.
 But seeing that every year great quantities of fo-
 reign steel were imported, by sovereign authority
 in 1785, a steel manufactory was instituted at Eka-
 terinburg on the model of that at Steyermark,
 where, from raw iron alone, a strong condensed
 steel like that of Steyer is prepared, and where
 since, as the works have been enlarged, as much
 steel can be made as is wanted for the empire,
 though the ores of those parts have by no means
 the quality necessary for that purpose. — ANCHOR
 FORGES. These are at several of the mine-works.
 Very large anchors are made both for the use of
 the navy and for exportation. — FLATTING
 MILLS. At which tin-plates are made for home
 consumption. — NAIL-MANUFACTORIES. Most
 of the nails for the inland trade are made by the
 smiths in some districts of the Volga, for which
 they generally use the slit-iron from Siberia.
 There is a manufactory of nails near Narva. —
 WIRE MILLS are not numerous and make not
 less “ enough

enough for the home demand; therefore wire and wire-works are imported *. — **NEEDLE-MANUFACTORIES.** There is a needle-fabric in the pronskoi circle; and a needle-maker lives in Reval. Nevertheless several millions of needles are imported every year. — There is yet no manufactory for scythes in Russia. In three years were imported at the ports of the Baltic alone 2,118,033 scythes. If we add to this what come in through Poland and over the Euxine, the number will amount to greatly above a million per annum. In Mosco a scythe costs usually fifty to sixty kopeeks, but in Siberia they are not to be had for less than a ruble. At some of the mineries attempts were made to make scythes and sickles; however they turned out but badly, and therefore the business was dropped. Yet am I persuaded upon very good information, that as good scythes might be made here as elsewhere. — **MANUFACTORIES OF FIRE ARMS.** In the empire are four, all belonging to the crown. The eldest and the greatest is at Tula. It was put on its present establishment in 1717, and employs upwards of 4000 workmen *. Besides musquets and side-arms at Tula are likewise made bits for horses, various kinds of locks, iron bedsteads, frames for sofas, taburets, chairs, and stools of

* Concerning the wire-works of the boors on the Volga, see Georgi's travels, tom. ii. p. 831.

* Suyef's travels, tom. ii.

iron, shears, files, chains, &c. — So early as Peter I. 20,000 musquets and 10,000 pair of pistols were made every year at Tula, and at Petrozavodsk 12,000 musquets and 6000 pair of pistols. — In the ten years from 1770 to 1780, at Tula were made for the field-regiments (those who never change their head quarters and several commands, not included,) 112,893 musquets for the infantry, 4584 for the yæger corps, 18,333 for the dragoons, 2347 musquetoons for the fleet, 42,528 carbines, 324 blades, 63,073 pair of pistols, 11,170 large scymetars, 51,639 sabres, 933 hangers, and 95,590 side-arms for the infantry. The price of a musquet for the infantry is four rubles, for the yægers five rubles, for the dragoons 397 to 409 kopeeks, a carbine 331 to 389½ kopeeks, a pair of pistols 369 to 384½ kopeeks, a dragoon sabre 243½ kopeeks, a hussar sabre 266 to 300 kopeeks, an infantry side-arms one ruble, a large scymetar 269 kopeeks. — The second is Sestrabek, forty versts from Petersburg; the third is at Petrozavodsk in the government of Olonetz, and the fourth in Orel. That at Sestrabek has upwards of 400 master-workmen. — The works at Tula were by supreme command new built in 1782, for which 388,000 rubles were allotted; it delivers every year arms for 15,000 men. Its yearly expenditure amounts to about 100,000 rubles, for which, besides the above, a considerable quantity of arms are made. The manufacturers receive

receive for their own work 25,000 pood of crown-iron. The two fire-arm manufactories at Orel and Olonetz are said to have each 500 workmen. At Tula are made various kinds of articles in steel, swords, cutlasses, &c. and are sold at a very moderate price. — Other cutlers in Petersburg, Mosco, Pavlovsk, &c. make also the like with a multitude of other utensils and instruments in iron; but very few shears, no fine files, nor a hundred other steel wares, of which great quantities come from abroad.

XLVII. COPPER and BRASS WORKS. At several of the Siberian copper founderies, as those of Pokhedyaschin, Demidof, Turtshchinof, and Tverdischef, &c. many utensils in copper and brass are made. There are also nine in Mosco, one at Vologda, with several in Livonia and one at Ischora near St. Petersburg.

XLVIII. CANNON-FOUNDERIES. The art of casting cannons has been known in Russia upwards of 300 years; for “tzar Ivan Vassillievitch,” says Levelque, “attira à Moscou des artisans & des
“ouvriers italiens; entre autres Aristote de Bo-
“logne, qui fondoit des canons, & l’on en fit
“usage pour la première fois en 1482 contre la
“ville de Felling en Livonie; les Suedois n’en
“employoient que treize ans après*.” — There is a very large cannon-foundery at St. Petersburg

* Histoire de Russie, tom. ii. p. 538.

under the direction of the artillery corps. In the same city is likewise an imperial bronze manufactory.

XLIX. GOLD AND SILVER WORKING. There are five gold and silver workshops at Mosco, and a few at St. Petersburg. Here may be added the jewellers and the gold and silversmiths such as dwelt so early as in 1420. at Novgorod, and who now have principally their residence in Petersburg, Mosco, and Ustiug. In the last-mentioned town much silver has been wrought from time immemorial; particularly here were made a great number of silver boxes for snuff, &c. with engraved figures blackened, of which art they made a great mystery. These figures, and even whole landscapes and maps were graved in the silver, and the lines drawn over with melted sulphur, which fixed them black, and the whole work was afterwards polished. These drawings upon the silver look like a black copper-plate engraving. Moreover the gold and silversmiths of this country, by a decree of Nov. 25, 1795, are allowed to work lower indeed than the 84th assay established in 1700, but not lower than after the 172d; higher at their own discretion, which, however, is never done. The 272d assay signifies the same as of 1000 parts.

L. CLOCK-MAKING. A workshop for this purpose was set up at St. Petersburg in 1765; and at

at present Mr. Robert Hynam is clock and watch-maker to the court. A striking clock was made and put up at Mosco so early as the year 1404*.

* La première horloge sonnante fut placée à Moscou en 1404 ; c'était l'ouvrage d'un nommé Lazare natif de Servie. Hist. de Russie par Levesque, tom. ii. p. 270.

V I E W
OF THE
R U S S I A N E M P I R E.

BOOK XII.

OF THE COMMERCE OF RUSSIA.

THE great importance of the russian commerce is so universally known, that it would be needless to expatiate on it here. Nor is it of less notoriety, that it was even very considerable in the remoter periods of northern history. The cities of Novgorod and Pscove especially became extremely rich and powerful by their trade, and were already connected with the hanseatic league*. Riga, Reval, and Vyborg likewise carried on a

* In consequence of this mercantile connection between Russia and the northern Europe, the hanse-towns in 1276 established factories in Pscove and Novgorod. The merchants of Hamburg, Lubek, &c. usually sailed to Narva and Reval, and thence proceeded through Dorpat and Pscove to Novgorod. Muller's samml. russ. geschichte, tom. v. p. 418.

considerable

considerable traffic in early times ; and none that are acquainted with history can be ignorant of the former flourishing state of commerce in Taurida and its adjacent provinces. But never was the russian commerce so important, so extensive, and to so large an amount as since the commencement of the prosperous reign of Catherine II. — This commerce, however, is naturally divided into foreign and domestic ; and these again into the maritime commerce — on the Baltic and the White-sea, on the Euxine and the Caspian ; and into the commerce by land with Poland, &c. with Persia ; with the Kirghises, and with China *.

* In Russia commerce is followed both by foreigners and natives ; of the former, however, those who are not enregistered in the russian company of merchants, can only trade by commission. The Russians very rarely deal with foreigners otherwise than on twelve months times, which contract they term *barak* ; but they are customarily even paid beforehand. Foreigners likewise can only trade in the gross or wholesale, and are obliged to deposit their commodities in the warehouses belonging to the crown, and to pay warehouse dues. All merchants who are inscribed in the guilds, and consequently are russian subjects, were heretofore even liable to the capitation-tax ; but, in virtue of an ukase of the 17th of March, 1775, they are exempted from it, and now in lieu thereof pay a per centage and a tax on their capital. The whole body of merchants is at present divided into three guilds. To the first belonged, till 1785, such as stated themselves as possessing a trading capital of above 10,000 rubles ; to the second those who declared to between 3 and 10,000, and to the third whoever gave himself in as possessing from 500 to 3000 rubles. But in pursuance of the municipal regulation

SECTION I

Of the Commerce by the Baltic.

NAVIGATION and commerce were pursued on the Baltic in the middle of the sixteenth century, only from the (now russian) ports of Finland and Livonia. But about the year 1553, in the reign of king Edward the sixth of England, a ship was fitted out at London, at the instance of the famous navigator Sebastian Cabot, for the purpose of discovering a north-east passage to China and India, and the chief command of it given to sir Hugh Willoughby, and after him to Richard Chancellor,

gulation bearing date the 24th of April 1785, those now belong to the first guild who declare to a capital from 10 to 50,000, to the second those who make return of a capital from 5 to 10,000, and to the third all who acknowledge their capital to be from 1000 to 5000 rubles. Capitalists, who deliver in their statement at upwards of 50,000, and bankers as having 100,000 to 200,000 rubles, belong to the class of what are called nominal burghers, and is endowed with signal privileges. On all these capitals only a certain per centage is annually paid; but on a requisition of recruits, the merchants are no less obliged to furnish their quota to the general levy, than the boors and the burghers; only with this difference, that the merchants have the liberty of paying a certain fine instead of delivering the recruits, which was formerly fixed at 360, but by a later regulation is now 500 rubles per head.

the

the former, with all his company, having perished miserably by the frost, and the latter was lost in the haven of St. Nicholas, in the White-sea, where at that time was only a monastery. Thus failed the first enterprize of the English for opening a trade with Russia. Soon after this tzar Ivan Vassilievitch caused the harbour of the archangel Michael to be constructed, granted several privileges to the english nation, and thereby at length grew up the trading port of Archangel, since become of such consequence. The commerce here soon increased; and in 1655 the exports from this port alone to England were to the value of 660,000 rubles; from 1691 to 1701, on a yearly average, to the amount of 112,251 pounds sterling; whereas the imports from England were estimated at only 58,884 pounds sterling. The revenue of the crown at Archangel amounted annually to about 100,000 rubles, a sum, which, according to the then value of money, may be deemed very considerable. The principal articles of export at that time were: potashes, caviar, tallow, wax, hides*, hemp, feathers, tar, yarn, beef, rhubarb, silk (probably chinese or persian), cork, bacon, cordage, furs, bristles, &c. all rough commodities †. — But during the reign

* In the year 1674 the total amount of the exportation of yufis was somewhat above 100,000, but at present is near upon 200,000 poods.

† Bachmeister, on the arrival of the English in Russia, Peter(b. journal, 1780, p. 248.

of

of Peter I. a great revolution took place in this trade; for, having built the city of St. Petersburg, he drew thither the commerce of Archangel, and it became thenceforward the chief mart of the Russian empire. However, the commerce of Archangel has not entirely gone to ruin; nay, since the alteration and debasement of the value of money, it amounts at present to a far greater sum than formerly, as we may safely venture to state the exports at two millions, while we can only reckon the imports at one fourth of that sum, or half a million of rubles. To the former articles of exportation, others of various importance are now added, as corn*, linseed, iron, flax, train-oil, sail-cloth and other coarse linens, tobacco, &c.

The commerce of St. Petersburg began in a short space of time to be of great consequence. Even in the year 1749, the exports amounted to about two millions and a half, and the imports to two millions of rubles. At present the former are estimated at from 32 to 37, and the latter at from 19 to 26 millions of rubles. The chief articles of the Petersburg exports are: iron, hemp, flax, yufts, tallow, tobacco, wax, kaviar, cordage, soap,

* Corn is indeed not properly a new article of exportation from Archangel; for even so early as the reign of czar Ivan Vassilievitch, rye was carried from that port to England, Holland, Sweden, Denmark, and France.

tar, hemp-oil, sail-cloth and coarse linens, furs, salt-petre, &c.

The commerce of Riga is likewise of no slight consequence, amounting, if we include that of Arensburg and Pernau, as belonging to the same government, with it, to an object of between six and seven millions of rubles, whereof the exports may be between four and a half and five, and the imports one and a half or two millions annually. The chief articles of export are, hemp, flax, cordage, pot-ash, linseed, hemp-seed, ship-timber, tobacco, corn, brandy, &c.

The imports in the year 1793 were here, as well as throughout the whole empire, much diminished by the ukase prohibiting the importation of french goods, and all other articles of luxury, and which is still in full force and effect, so that at Reval a great variety of those commodities have been burnt as contraband. By a new ukase of Dec. 16, 1793, the price of brandy has been raised, as well as the import duties on foreign spirits, whereby it is asserted, that the revenue will gain an annual increase of five millions of rubles.

Mr. Herrmann in 1790 calculates the total of the exports from all these ports to amount annually to from four and a half to five millions, and the imports from one and a half to two millions of rubles : and the whole of the commerce,
active

active and passive, of that government might then amount annually to between six and seven millions *.

At that time the customs in all the above-mentioned ports amounted to upwards of 800,000 rubles. From the above author we learn, that,

“ In the year 1779 were brought into Riga alone, in specie, 241,809 holland-ducats; and 634,214 alberts-dollars, which in russian coin amounts to 1,501,543 rubles and 40 kopeeks.

“ Reval and Habsal exported annually together for 600,000 rubles, and import for 800,000 rubles; of the former the principal articles are, corn, brandy, hemp, flax, wax, &c.

“ The principal articles of importation are for about 50,000 rubles in salt, coffee, sugar, &c. those of exportation; rye, brandy, linseed, flax, hemp, &c. The corn alone in many years amounts to 300,000 rubles. The present commerce at the two ports amounts annually to about 1,400,000 rubles, of which 800,000 are set down to the imports, and to the exports nearly 600,000 rubles. The duties in 1785 exceeded 182,000 rubles; but in 1775 were but little more than 45,000.

* The trade of the place is sometimes also very considerably increased by orders from the government: for instance, in January 1794, an order came from court to deliver within two months, from the 12th of February to the 12th of April, 15,503 poods of fresh beef, 6362 poods of fresh butter, 8753 poods of buck-wheat-grits, for the supply of the imperial fleet, then fitting out.

“ Narva exports annually for more than 500,000 rubles, in wood, hemp, flax, &c. and imports in all kinds of commodities for about 50,000 rubles.

“ Vyborg and Friederichshamm trade chiefly in deals ; the annual exportation amounts to nearly 100,000 rubles, and the importation to full 200,000 rubles.

“ The ruffian commerce, in all the ports, which may generally be termed the Baltic trade, amounts at this time, therefore, to a sum of 35,750,000 rubles ; of which the exports make 21,200,000, and the imports 14,550,000 rubles.

“ It is said that the ruffian furs are dearer in Petersburg than in Dantzic, Hamburg, and Leipzig ; and this is, because so many furs are smuggled out of the country. “ Though Russia has
 “ a surplus of furs, yet some sorts are brought
 “ thither from America, which, because far-fetched
 “ and dear bought, are preferred to the Siberian *.”
 In 1775, 46,460 american beavers and 7143 otter-skins were imported at Petersburg. — No species of commerce requires so much speculation as that in furs. Whenever a pope or a king of England dies, this trade all at once undergoes a complete revolution, by taking a new course, which lasts a twelve month, and then returns to its former channel. On such an event, the cardinals at Rome and the nobility at London want so much ermine

* Beausobre, finance, part ii. p. 450.

for their robes, that the whole stock in Norway, Sweden, and Russia, is immediately bought up and sent to London and Rome, for which reason all other kinds of fur considerably rise in value*.

The trade in potash, rhubarb, tar, train-oil, tobacco, caviar, &c. was formerly a monopoly of the crown. But at present, salt, brandy, salt-petre, and gunpowder are the only products it reserves to itself. Under Peter I. the trade in yuffs, together with all Siberian and Chinese commodities, were likewise included in this monopoly. From the following statement of the exports and imports valued in rubles, the Petersburg commerce will be more accurately viewed.

In the year		Exports amounted to		Imports.
1742	-	2,479,656	-	2,030,337
1749	-	3,184,322	-	2,942,241
1753	-	3,451,383	-	3,220,613
1754	-	3,577,939	-	3,279,097
1755	-	4,550,060	-	3,321,875
1757	-	4,598,120	-	3,193,375
1759	-	3,530,614	-	not procured
1764	-	5,885,243	-	5,459,522
1775	-	8,299,584	-	6,892,833
1776	-	not procured	-	5,256,521
1777	-	12,960,000	-	8,640,000
1779	-	not procured	-	8,856,801
1780	-	10,941,128	-	8,656,379

* Taube, account of the English trade and manufactures, p. 112. *Herrmann; statist. schilde* p. 439-434.

In the year	Exports amounted to	Imports.
1781	12,954,440	9,582,354
1782	11,467,347	12,204,482
1783	10,098,797	11,674,120
1784	12,941,513	12,172,345
1785	13,497,645	10,033,785
1786	13,360,011	11,775,577
1787	not procured	15,564,553
1788	20,351,937	15,474,396
1789	21,735,663	15,371,105
1790	21,641,779	22,964,618
1791	20,040,697	25,140,631
1792	21,694,667	22,262,738
1793	23,757,954	14,580,569
1794	25,565,767	21,741,176
1795	31,767,952	23,019,175
1796	57,110,333	26,355,890
1797	32,450,911	19,366,059
1798	36,552,476	25,936,020
1799	38,169,925	19,290,779

1793. Imported by russian subjects, for	Rubles. Kopecks,
By the English, for	10,339,659 0
By the Danes, for	2,879,100 69
Excess of the exports over the imports this year	538,576 25
	9,177,385 14

1793. The receipts of government from the customs, excise, and confiscated goods	2,795,941 474
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1792. These receipts were	4,109,079 36
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The

- The diminution of the year 1793 in these receipts by 1,313,132 rubles 88½ kopeeks was a necessary consequence of the new regulations in regard to the importation of foreign commodities. For the same reason the number of the ships arrived was 148 less than in the year 1792. The sum of coined gold and silver brought into the port of St. Petersburg in the year 1793, is estimated at 57,600 rubles.

It must here be remarked, that these amounts of the imports, as well in the port of Petersburg, as in the other sea-ports, exceed not a little the true value; for, as, in order to prevent, as much as may be, all frauds at the custom-house, a law has been made to oblige the importer to dispose of the commodity which he has estimated at this or that value, to the custom house officers, for the same value, with an allowance of so much per cent. profit, when these officers have reason to believe that he has rated the value below the truth, so, it not unfrequently happens, that the merchants enter their commodities above the price they paid for them, and pay the duties accordingly. Hence is evident that the true balance is more in favour of Russia than appears from the custom-house lists.

In the year 1778 there arrived 602 ships

1779	—	705
1780	—	554
1781	—	783
1782	—	634
1783	—	632

1784	—	890
1785	—	679
1786	—	856
1787	—	783
1792	—	606
1793	—	886
1797	—	874
1798	—	1053
1799	—	771

of which 580
were Eng. alone.

Eng. 536.

Eng. 440.

Eng. 619.

Eng. 454.

The receipts at the custom house at St. Petersburg and Cronstadt amounted,

Rubles. Kopecks.

In the year 1775 to	1,698,626	14	} In 5 years, from 1775 to 1779, these receipts amounted to 8,990,838 r. 48 k.
1780 -	2,077,430	16	
1781 -	2,374,300	9½	
1782 -	2,670,798	42½	
1783 -	2,966,188	28	
1784 -	3,109,385	—	
1785 -	3,082,698	—	
1786 -	3,278,050	60	
1798 -	4,219,325	—	
1799 -	4,684,184	—	

SECTION II.

Of the Commerce of the Euxine and the Caspian.

THE commerce of the Euxine, or Black sea, since its revival, is, in a manner, still in its infancy. However, we may estimate the exportation,

ation, from all the ports there belonging to Russia, at about one million; and the importation at one million and a quarter. The principal articles that find a vent here are, cannon, furs, salted beef, butter, cordage, sail-cloth, kaviar, corn, and a variety of russian manufactures, especially iron, linen, cotton stuffs, &c. The imports are, wine, fruit, coffee, silks, rice, and all kinds of turkish commodities.

Over the Caspian, commerce, indeed, is of a very ancient date; but at present is not so very considerable as it might be made. The exports amount to somewhere about 1,200,000, and the imports to 1,000,000 of rubles. The articles of exportation here are nearly the same with those that find purchasers on the Euxine, whereas we take in return scarcely any thing but silk.

As early as the fourteenth century the Venetians and the Genoese, by the way of the Caspian, brought the indian, persian, and arabian commodities, with which they supplied the southern parts of Europe over Astrakhan, to their magazines at Azof and Keffa. From Astrakhan the goods went up the Volga, then by land as far as the Don, on which river they were next forwarded to Azof. Even the northern parts of Europe were furnished with the same asiatic commodities by the russian traders, over Astrakhan, who sent them to their principal magazine at Visbey, a hanse-town on the isle of Gothland. The devastations occasioned by the wars of Timur, towards the end of the fourteenth century, caused the transfer of this trade
from

from Astrakhan to Smyrna and Aleppo; and the arabian commerce, for which these places, besides, lay more convenient, never returned again to Astrakhan; but a part of the persian trade was, some time afterwards, turned into its former channel.

The most considerable harbours and places of trade on the Caspian, lie partly on the russian, partly on the persian, and partly on the arabian coasts. The russian are, 1. Astrakhan, the grand mart of the caspian commerce. 2. Gurief, at the exit of the Ural; but few merchants, however, reside here, for the sake of carrying on a little trade with the Kirghistzi, &c. 3. Kitzliar, at the disemboguing of the Terek. The ships bound for this place used formerly to run into the southern mouth of the Terek; but, because the mouths of that river are now choaked up with sand, the goods are landed in a little bay about 60 english miles from Kitzliar. This latter place draws from Astrakhan the european commodities wanted for the persian trade; as also corn and other necessities of life for the russian colonies on the Terek, and for the inhabitants of the neighbouring chain of mountains of Caucasus. Besides the goods which are ordinarily sent from Kitzliar into the persian harbours, the inhabitants carry on a smuggling trade to Shamachy, Derbent, and even as far as Teflis in Georgia, but is extremely insecure, as the caravans are frequently plundered by bands of robbers that infest those parts. — The persian

persian havens are, 1. Derbent, in the province of Shirvan; but vessels can rarely approach the shore, on account of the sands and shoals, and are obliged to lie at anchor two or three miles off. Therefore not more than three or four russian ships come annually to this place, which are usually laden with corn, bringing with them likewise iron, steel, and lead for the Lesghis and other tartarian nations dwelling on this side Caucasus. 2. Niescovaia pristan, or Nisebad, is a haven formerly much frequented by the Russians; the merchants particularly from Shamachy came hither in great numbers, with european commodities. — 3. Baku is reckoned the safest harbour of the Caspian, because ships may lie at anchor in seven fathom water; yet in some places the entrance is dangerous on account of shallows, islands, and sandbanks. Baku, like Derbent, is inhabited by Persians, Tartars, and some few armenian merchants. The principal articles of export by which the traffic of this place is chiefly supported, are the naphtha, and the fine rock salt, both of which are collected on the east side of the bay. The inhabitants indeed cultivate saffron and cotton, but not with any considerable advantage. The trade of Baku is doubtless of more consequence than that of Derbent, though in fact but very confined, and is mostly carried on with Shamachy, whence it gets silk and silk-stuffs. A russian consul usually resides here. — 4. Sinfili, or Enfeli, is truly but a wretched place,

place, yet it is the most frequented of all. Formerly vessels entered the bay by the canal; but, as that passage is now obstructed by accumulated sands, they remain at anchor in the road. Enseli lies at the distance of only a few versts from Resht, the chief town of the province of Ghilan, which produces the best silk and the finest silk-stuffs of all these parts. At Enseli there is also a russian consul; and the Russians trade here to great advantage. Commodities go from hence to Resht, which town supplies the bordering provinces of Persia, and the neighbouring independent states as far as Georgia, with european commodities; those goods excepted which go immediately from Astrakhan, through Kitzliar and Mosdok, into the adjacent districts of Georgia and the neighbouring mountains. — 5. Farabat, and 6. Medshetizar, on the southern coast, in the province of Mazanderan, are mere villages. In the latter, however, a considerable trade is carried on, on account of its vicinity to Balfrush, the chief town of the province, whither the Russians and the Armenians bring their wares. Hither come likewise merchants from Kiskan, Ispahan, Schiraz, Korazan, &c. bringing with them persian and indian products. The province itself exports silk (which, however, is far inferior to that of Ghilan), and rice and cotton. — 7. The bay of Astrabat, where the Russians land and then travel to the capital town of that name. The products of this province, and their exports

exports and imports, are nearly the same with those of Mazanderan. Astrabat trades mostly with Kandahar. — The tartarian havens are, 1. The balkanskoi bay ; and, 2. Mangushlak ; both of which, but especially the latter, have a very secure roadstead. The Russians visit the islands in the balkanskoi bay, which are mostly inhabited by pirates of the race of the turkoman tartars ; these islands yield rice and cotton, and one of them, named Naphthonia, has a great quantity of naphtha. It is thought that the commerce of these parts might be greatly extended, to the advantage of the Russians, as it would be far more convenient to trade from hence with the bukharian Tartars, than from Orenburg, through the country of the Kirghiftzi. The commerce of Mangushlak is more considerable. The neighbouring Tartars bring the products of their own country, and those of Bukharia too, viz. cotton, yarn, stuffs, furs, hides, rhubarb, &c. The principal commodities that are brought from Astrakhan to the ports of the Caspian, are, dutch, french, silesian, and english cloths, vitriol, soap, alum, sugar, russian leather, needles, russian lincens, velvet, glass ware, paper, some few furs, hides, a small matter of tea, corn, butter, wine, brandy, wooden vessels for household uses, sea-horse-teeth, iron, copper, tin, lead, iron ware, clocks, indigo, cochineal, &c. The most material articles of importation are, silk, (mostly raw) from Shirvan and Ghilan, lamb-skins from Bukharia, rice, dried

dried fruits, spices, saffron, a trifling matter of salt, sulphur, and naphtha. The Indians and the merchants of Khiva bring occasionally gold and silver in ingots and bars, gold-dust, precious stones, and pearls, to Astrakhan. — In the year 1770, the exports and imports of the whole commerce, both by sea and land, to and from the Caspian sea, amounted only to about 400,000 rubles; in the year 1768, already to upwards of 800,000, and in 1775, to more than a million of rubles; without reckoning the contraband trade. At present it is undoubtedly at the same amount.

Soon after Peter I. had subdued the northern provinces of Persia to his dominion, he sought to induce the English to engage in a commerce with Persia, over Russia*; but the many unsuccessful attempts that had been made since the sixteenth century, and in which large sums had been lost, deterred them from entering into the designs of that monarch. The great advantages expected by the emperor to accrue from his new conquests, now suddenly vanished; and, to add to his disappointment, these provinces, which at first brought in a net profit to the crown of 600,000 rubles, now became burdensome to it. The inhabitants abandoned the place of their nativity; agriculture and the breed of the silk-worm lay neglected, and

* He even instituted a russian mercantile company, which consisted of 400 actions, each of them at 150 rubles, and which was not abolished till 1762.

a great part of the garrison died from the unwholesomeness of the atmosphere ; so that within the space of 14 years, 130,000 Russians are said here to have found their graves. This moved the empress Anna to relinquish these provinces to Nadir Shah, in consideration of obtaining some advantages more important to commerce, such as, among others, the liberty of import and export, duty-free, in all the harbours of the Caspian. Russia now gained more from these provinces by trade, than before by the conquest and possession of them. Shirvan, Mazanderan, and Ghilan, cultivate the finest silk, rice in superfluity, and gladly take the Russian products. — Encouraged by the prospects this happy change afforded, and hoping to profit by favourable conjunctures in the court of Persia, at the same time considering the small expence of carriage in Russia, Mr. John Elton formed the project to deliver Persian products, via Petersburg, to the English from the first hand, and consequently cheaper than by getting them of the mercenary Armenians, over Smyrna. He promised himself a great vent for English commodities, with the protection of the Shah, who was something more than a bold and successful rebel ; and, having persuaded the English factory at St. Petersburg, then the Russia company in London, and the Russian court itself to concur in this project, in the year 1742 he built a ship at Kazan, freighted it with a cargo obtained from Petersburg, and

and sailed to Astrakhan. The profits arising from the sale of the first cargo were not such as to abate his hopes of making a rapid fortune. In the mean time the new commerce struck root; at last, however, Elton himself spoilt all, by suffering himself to be caught in the snare laid for him by the envious Armenians, who had hitherto vainly attempted to prevent the success of his enterprise. Nadir Shah found Elton a very fit instrument for putting in execution one of his darling schemes. He made him an admiral, caused a ship of twenty guns to be built, the command of which he gave to Elton, with orders to hoist the persian flag, and to oblige all the russian vessels to strike sail to it as paramount over the whole extent of the Caspian sea. In vain did the factory send him letters of recall; in vain did they offer him riches and promotion from the british court; he remained in Persia, where he out-lived Nadir-Shah; after whose death he soon fell a victim, as his favourite, to the rage and resentment of the oppressed subjects. Elton, by undertaking the bold plans of his new sovereign, must necessarily have excited the indignation of the russian court. If it had before approved and encouraged the specious enterprize, on the score of benefits to arise from it to the russian empire, it now prohibited the English from the farther prosecution of this traffic; not from jealousy or envy, but for very just and solid reasons. ~~The nation now carries on this lucrative commerce~~ itself;

itself; and Baku and Singli, or Enfeli, are the principal ports to which the Russians trade.

In the year 1785 were brought into the Russian ports of the Euxine, by the Dardanelles, in various articles, to the amount of 806,330 piaſters; and to the value of 735,117 rubles in Russian goods, exported from them to the Turks. But, as the transport from the Dardanelles does not make up the whole of the Russian commerce on the Euxine, I have ſtated it at the above ſum. — By the ukaſe of the 22d of February, all perſons engaged in commerce and foreigners of every denomination are allowed full liberty in the exerciſe of their religion, together with all the rights, privileges, and advantages in the ports of Kherſon, Feodoſia*, and Sebaſtopol, that are enjoyed at Peterſburg and Archangel. The trade of the Krimea was heretofore uncommonly gainful and extenſive; for, in the eleventh century, when a part of this peninſula fell under the dominion of the Polovtzi, better known from the byzantine hiſtory under the appellation of the Komanians, they granted the Genoefe, in return for the promiſe of the payment of certain tributes, the permiſſion to erect warehouses, which, in proceſs of time, grew into towns and fortrefſes. In this way, among others, Kaffa roſe to that greatneſs which it has preſerved to our times, and which, eſpecially in the thir-

* Or Kaffa.

teenth century, distinguished it as the foremost of the staple-towns of those regions. But by little and little the Genoese were driven out of the Krim, and with them the flourishing commerce of these parts took its flight, till such time as Peter the great, having got possession of Azof and laid the foundations of Taganrok, attempted to get a share in the commerce of the Euxine by extending the russian traffic thither, which was one of the projects he had at heart. This attempt, however, proved entirely abortive, on his being forced to surrender Azof by the treaty of Pruth, after the unsuccessful campaign of 1711. The revival of the trade of the Krim, or rather of Taurida, was reserved for the brilliant reign of Catharine II. when, on the re-acquisition of Azof and Taganrok in 1774, and with them the fortresses of Kinburn, Kertsch, and Yenicali, and a great stretch of country between the Bogue and the Dniepr, it began again to rear its head; but it did not thoroughly revive till 1782, when this commerce was settled on a firm and lasting basis, and the grandest prospects opened to it, by the obtention of the whole Krimea. This commerce, however, cannot be pushed to any considerable degree of consequence, till the navigation of the Euxine is entirely free to Russia, and till Taurida and the neighbouring regions, have greatly increased in population. But then the russian commerce in the Euxine cannot fail of becoming of immense importance.

portance. Then the southern provinces of Russia will have an opportunity to export a great part of their superfluous products; to carry on a considerable trade with the Poles and the Austrian provinces; to supply Constantinople with the necessary articles, especially corn; to traffic with the Greeks in the Levant, and to carry a part of the Siberian iron, hemp, linen, flax, &c. by the Dardanelles directly into the Mediterranean, and thereby to furnish Spain, France, and other countries; quicker and cheaper with ship-timber, than by the Baltic and the German ocean. Till 1780 the Russian commerce on the Euxine having been gradually on the decline, or at least ever fluctuating, was then in a total stagnation, though somewhat upheld since the treaty of peace concluded at Kainardji, principally by sums of money advanced by Russia, and by the establishment of a Russian mercantile house at Constantinople, under the firm of Siednof, James, and company. According to the custom-house books,

In the year	the exports amtd. to rubles kop.	the imports, rubles kop.
1776	369,822 88	87,143 29
1777 - - - - -	242,118 44	83,245 90½
1778 the trade suffered a total interruption.		
1779 - - - . .	161,690 38	90,644 74½
1780 -	130,187 —	105,470 58
	<hr/> Total 903,818 70	<hr/> 276,504 52
Consequently one year with another }	225,954 67	69,126 13

Therefore at that time the whole commerce of one year amounted to about 300,000 rubles; but in the years 1785 and 1786 already to a million and a half; and, if we add to this the contraband trade, it amounted previously to the breaking out of the war, certainly to above two millions: whence it appears how greatly this commerce has increased since the taking possession of the Krim. Yet it will never attain to any vast importance till Russia, by one way or another, has got a power superior to that of the Turks on the Euxine.

Mr. Soimonof has pointed out the harbours where, in his opinion, and indeed from actual experiment made by himself, ships may most conveniently turn in, deliver their cargoes, and take a fresh freight on board. Nisovaia pristan, or the coast of Nisabat, is not proper for ships of the construction he proposes; but if the merchants mean to continue their trade to that place, and for that purpose prefer the old buffes, to hukers and galleots, experience may shew them, that his vessels will not be less serviceable to them, and at some distance from the coast may ride safely at anchor. It would be of great advantage to form a harbour and establish a place of trade at one of the mouths of the river Kur, as it was the intention of Peter the great to do. Thither all the commerce of Georgia and Shirvan might be drawn; and this place, in time, would become a considerable mart for the whole western coast of the Caspian.

Caspian. Even if ships were to lie in the Apsheron canal, as they may do in great safety; their cargoes might be carried thither over land from Shamachie. Though the distance be greater than from Nisovaia pristan, yet the way is not so mountainous. Another harbour, in the gulf of Sinfili, would be very commodious for Ghilan, and for the transport of commodities to and from Persia. However, Mr. Soimonof does not insist upon this, because in his time the trade was already established there, and Ghilan was under the Russian dominion. Thirdly, the city of Astrabat lies very convenient for a harbour, and for trade to the eastern districts of Korazan, Bukharia, Samarkand, Balch, and even to India, for which purpose, if this place be not ceded to Russia, as it ought to be in conformity with the treaty concluded with Ismael-Bey, a fresh treaty should be made with Persia. — The eastern coast of the Caspian is not taken into consideration by Mr. Soimonof, on account of the faithless and piratical Trughmenians, and because the nest of robbers at Khiva preclude all possibility of trading thither. Only to Tuk-karagan the trade might be carried on in the same sort of vessels as formerly, for which the harbours in the island of Kulali lie commodiously enough, and would save them the necessity of exposing themselves to dangers on the coasts of the firm land. — Mr. Soimonof then proposes to establish a magazine on the isle of

Shilot in the Apsheron-canal; and there to keep a post-boat, with an under officer, a cook, and six sailors, to visit all the havens, and bring intelligence from them to Astrakhan. Permission, he thinks, should be granted to such persons as wish to maintain themselves by catching fish and seals, to build houses and settle there. There would be no want of people who would gladly avail themselves of such a licence. In the various arms of the river Kur they might lay the same sort of ustiugs, or fish-snares, as are used on the Volga, as the beluga, the sturgeon, and the sevruga of the Kur, strive upwards as they do in the Volga. These fish are at some seasons in such abundance, that one may hook them out of the water with nothing but a boat-hook, as Mr. Soimonof himself often has seen done in the canal of Sinfili. But the people there only take them when they are in want of glue for their own use. For the purposes of this fishery particular vessels must be kept, as well to go from the Apsheron-canal to the Kur, as also to bring the salted or dried fish to Astrakhan, or to other russian settlements on the Caspian. Mr. Soimonof thinks the culture of the silk-worm and of saffron might be managed to much greater advantage than they are at present.

Although it is the singular and unprecedented good fortune of Great Britain, that her empire in India stands unrivalled amidst surrounding and
contending

contending nations—although Sweden, Denmark, Holland, France, Portugal, and Spain, have in a great measure failed in supporting rival establishments in India, we still may receive a fatal wound from the bold and enterprising spirit of Russia, who has now acquired so much weight in the political balance of Europe, that we regard her aspiring and ambitious genius with wonder and astonishment ! Enlightened by science, improved by arts—and by an extensive and lucrative commerce, rising fast to opulence, she is now become a mighty nation ; and it may be considered as certain, that in the period of a very few years she will greatly injure the british trade to India—for it is known to be a fact, that the Russians carry on a very lucrative trade on the Caspian. For a long time, indeed, it suffered very serious losses from the kozak hordes, who often interrupted and plundered the russian caravans, on their way to Astrakhan ; but at length these robbers were completely subdued, the roads became safe, and the commerce of Persia again revived and centered in Astrakhan ; and we find merchants flocking thither from Bulgaria, Krimea, Armenia, Hindostan, and various parts of India, to traffic with the Russians.

A company was formed by Peter I. to which he granted an exclusive privilege of trading to Astrakhan and Persia ; however the empress Catharine II. annulled this exclusive right granted

by Peter, and allowed all her subjects to participate in that trade. Factories, at a great expence, were built at Astrakhan, and consuls settled at Baku and Sinfili: this commerce is, however, greatly injured by a contraband trade carried on in Shamakia, and other persian inland towns, by the armenian merchants; who, knowing the country and the language, have a considerable advantage over the Russians. The city of Astrakhan is built on an island formed by the Volga, at its discharge into the Caspian; and as through the Volga all articles of commerce from the Baltic ports are carried thither, with great ease and safety, the city of Astrakhan is in consequence become one of the most considerable marts of the globe, and is inhabited by Russians, Turks, Armenians, Persians, Tartars, and Jews, not to mention emigrations from Kabul and the province of Oude.

At Rascht, the Russians have also a factory, with a body of soldiers, and a church of their own: they carry thither european goods, which sell at a great advantage, and bring from thence silks and stuffs, manufactured at Ghilan, which are esteemed the best in Persia; but the trade to China is certainly the most lucrative and important branch of their commercial intercourse with Asia. The principal mart at present is Kiachta, situated on the frontiers of the two empires, and the Russians take care to supply it with all kinds of european goods, which the Chinese buy up with avidity. The

The amount of this trade to Russia, in exports and imports, is valued at one million pounds sterling annually; and to this circumstance alone we may in a great measure attribute the present cramped and humiliated state of the company's trade in China: for so long as the Chinese can be furnished with every article that Europe affords, they will never suffer the English, whom they call "a restless discontented set of people," or indeed any other european nation, to exceed the present prescribed limits, which are confined to Canton. Various have been the schemes and plans submitted to the directors for extending the export of british articles into China; and many experiments had actually been tried with the mandarines, which, after producing humiliation, imprisonment, a great loss to the company, and personal insult to their supercargoes, proved abortive.

Numerous obstacles oppose our trade to the interior parts of China; but Russia is the country for successful plans, and surmounting obstacles, be they ever so gigantic. In the year 1783 was formed one that astonished all Europe.

Driven from their ordinary roads, by the war which Hyder Ally and the British were making on one another, some merchants to the north of Bengal, after having traversed immense countries, had come with their goods to the frontiers of Siberia, where they had been received with transport, and they had promised to return. The

board of trade at St. Petersburg being informed of this novelty, had immediately projected a branch of commerce with the Indians; and to forward it, they had fitted out a fleet at Astrakhan, to seize upon Astrabad, which is the most southerly port of the Caspian, and the spot whither the Indians could most conveniently come to trade; but the Kadschares, an invincible people, who abhor slavery, and can defend themselves against it, dispersed the fleet, and the enterprize had the most miserable issue. In the mean time the court of Russia was not discouraged by that, and till a more favourable opportunity, delayed a second attempt, on which she entered with so much the more propriety, as the inland navigation established between St. Petersburg and Astrakhan must extend the views of Russia to the trade of India; because, by establishing this communication, she removed the obstacles the most difficult to be surmounted by the commerce that may be carried on in this quarter: but if Russia succeed in this attempt, the India trade will infallibly receive a blow in England, unless our company oppose the plans of Russia, by promoting a commercial intercourse with Persia, augmenting their establishments at Busforah and Bushire, which, although at present in a declining state, may, if properly attended to, be productive of great and important benefit to Great Britain: our trade to Ormuz might also be revived; and

as

as the present ruler of Schiraz is disposed to protect and encourage Europeans to trade thither, why might not the Bengal government cultivate the friendship of so liberal a prince ?

SECTION III.

Of the Commerce by Land.

THE commerce by land with the Poles, Prussians, &c. is considerable. Russia takes from these countries commodities for about two millions of rubles, and carries to them for scarcely 500,000. The principal objects of importation are, scythes, cloths, linens, hemp, flax, &c. the two last of which products are again sent off from Riga.

The commerce by land with Persia passes over Kitzliar and Mosdok, and Russia receives principally, by the same way, silk. The exports amount to about 100,000, and the imports to 200,000 rubles*.

The commerce with the Kirghises is mostly carried on in the way of barter, and this chiefly in the Siberian fortresses of Orenburg, Troitzk, Peterpavlovsk, Yamisheva, Semipalat, and Ustkamenogorsk†. Goods to about a million and a

* In the year 1777, silk was imported, over Kitzliar alone, to the amount of 125,104 rubles.

† Somewhat of a concern in silver and gold enters into this commerce ; not as money but as articles of trade. In Semipalatinsk, for example, in 1777 for 72,015 rubles in bars of silver were imported.

half rubles are exported, and imported to just the same amount *. The Kirghises bring principally horses, horn-cattle, sheep, and very costly sheep-skins, receiving from Russia in return woollen cloths, iron, and a great quantity of household goods and other european commodities.

The chinese commerce (which, however, is at present interrupted) is likewise a mere barter, but very considerable. We may admit, without much danger of mistake, that Russia, of late years, has thence received articles for two millions, and returned them for nearly as much. The chief of the matters that come to Russia from China, are tea, silk, and kitaika (nankeen,) and of what are carried thither, the valuable siberian furs †.

The aggregate total then of the whole commerce of Russia by land, comes to near 9,800,000 rubles, which gives a balance of about 1,600,000 rubles against the empire.

* According to the list annexed, the trade with the Kirghises in 1775, did not amount to near so much. Three, however, of the above-mentioned forts are omitted in it, where the trade is at present considerable. In Semipalatinsk alone the exports were above 100,000 rubles. There are also several other petty forts on the line, where the Kirghises traffic, as do the Bukharians and others; so that my statement, for the time present, is undoubtedly not too high.

† Mr. Coxe reckons the chinese trade already for the year 1777, at 7,200,000 guildens, (above four millions of rubles.) Travels, vol. i. p. 181. and in his other work, Discoveries of the Russians, at four millions of rubles.

SECTION

SECTION IV.

Of the whole Commerce in general.

FOR convincing the reader of the round accuracy of the sums stated in the preceding section, the annexed statement may suffice, as it represents the whole account of the commerce in 1775.

At the Sea-ports.	Imports.	Exports.	Duties.
	Rubles. Kop.	Rubles. Kop.	Rubles. Kop.
St. Petersburg .	6,892,833 54½	8,299,584 95½	1,696,829 96½
Cronstadt		37,848 0	1,786 18
Narya	37,211 10½	458,645 3½	94,739 87
Viborg	113,583 69	51,347 2½	21,487 35½
Friedericks-hamm	28,939 67	17,574 39	6,770 18½
Archangel	281,747 63	1,367,926 38½	144,961 84½
Onega		6,289 83½	1,164 16½
Kola			10 23½
Astrakhan	37,224 37½	561,327 3½	24,308 6
Temernikof	79,708 70½	77,545 1½	22,979 39½
Riga	1,950,803 25	4,619,797 85½	588,496 32
Reval	556,994 50	420,380 47½	42,667 23½
Pernau	88,155 17½	280,674 53½	29,197 65½
Arensburg	16,023 51½	55,528 86½	4,278 75
Habsal	13,508 50	33,838 50	2,816 77½
At the custom-houses on the frontiers.			
Piscove, towards Poland	323 67½		94 51½
Olonetz, towards Sweden	4,587 20	8,821 18	676 30½
Neushlot, ditto	93 83	149 95	19 7½
Kitzliar, towards Persia	106,888 65	89,666 9	5,374 54
Krementschuk, towards Poland	24,734 95	13,166 95	6,725 60
			Scheriafk

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At the Sea-ports:	Imports. Rubles. Kop.	Exports. Rubles. Kop.	Duties. Rubles. Kop.
Sekerinsk . . .	134 0	25 25
Tsaritsbensk . .	8,491 12½	32 40	7,161 95
Perevolot'sk . .	18,161 50	777 0	3,285 37½
Elizabet'sk . . .	. . . . .	32,209 49	747 52½
Isiumsk	488 —	. . . . .	103 78
Bachtut'sk . . .	4,045 50	163 20	857 75
Khopersk . . . .	. . . . .	16,785 85	518 59½
Neshinsk . . . .	. . . . .	4,775 60	1,191 40½
Vassilkof	83,169 48	302,395 71	11,708 42½
Pereflav	60 0	695 0	59 75
Staikofsk	303 0	241 25	14 39½
Meshigorsk . . .	4,029 45	397 80	1,233 20
Sorokofnitsk . .	50,903 22½	23,791 50	6,165 52½
Kamensk	320 —	18,141 5	830 9½
Asof, or Taganrok, towards the Cau- casian nations .	7 20	109 30	9 57½
Rogat'shef, towards Poland	61,029 68	7,172 75½	10,473 62½
Bakumensk . . .	362 55	730 60	151 28
Medvedova . . .	3,005 51½	4,272 20	276 36½
Talotshinsk . . .	55,988 74	164,693 78	13,204 10½
Rubesh	669 72	2,223 87	67 29½
Belcunit'shef . .	1,198 50	951 33	78 78½
Dobransk	4,664 72	22,392 50	5,940 85½
Vishnoffsk . . . .	. . . . .	13 80	3 18½
Shelogofsk . . .	5,300 49	86 20	886 32
Melnitsk	75 45	54 50	20 48
Bezhenskoffsk . .	37,830 60½	16,275 1	7,896 62½
Druitsk	17,624 56½	1,014 15	2,579 20
Scht'shut'shef . .	559 53½	. . . . .	125 29½
Boeffsk	3,241 16½	. . . . .	. . . . .
Orenburg, towards the Kirghistzi ' and Bukharians	207,242 52½	206,214 67½	48,127 57½
Troitak	34,339 40	31,137 23½	7,208 54
Yamush'ef . . .	2,828 61	2,464 28½	215 55½
Peterpavcl'sk, or Kiachta, towards China	1,427,450 48½	1,294,581 2½	462,559 35½ Zuruchatai

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At the Sea-ports.	Imports.		Exports.		Duties.	
	Rubles.	Kop.	Rubles.	Kop.	Rubles.	Kop.
Zurichatal . .	2,486	17½	1,029	12½	8,330	48½
Particular receipts	.	.	.	.	35,511	50½
Total	12,469,372	87	18,557,279	30½	3,326,182	3½

Of gold and silver, in foreign coin, imported by the

Baltic 1,805,395 3½

Expended in Payment of the dues in dollars 1304 pood 14

pound 26 solotniks 913,049 89

Brought in, therefore, by the duties in russian money . 2,377,620 64.

The total income by the duties and customs of all the ports and frontier-places of the empire amounted,

	Rubles.	Kop.
From 1758 to 1768, in 11 years, to	30,847,440	15½
1762 — 1772, ditto,	33,236,051	66
1762 — 1775, 4 ditto,	43,791,183	30½

There comes in annually a considerable sum in foreign gold and silver: for instance, from 1758 to 1768, in 11 years, were imported to the amount of 19,219,566 rubles 85½ kopeeks.

From 1758 to 1768, in 11 years, in dues of all kinds at the several custom-houses of the empire, 10,310,353 rubles 43½ kopeeks in silver. From 1762 to 1772, also in 11 years, 8,836,326 rubles 98½ kopeeks; and from 1762 to 1775, in 14 years, 11,584,924 rubles 90 kopeeks.

How much the commerce of the russian empire has increased since the commencement of the late reign may be seen by the following table, after casting an eye on this short statement of it a little before that æra; viz. In the year 1758, the exports amounted to 8,150,683 rubles, and the imports,

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imports to 5,826,126 rubles: total 13,976,869 rubles. In 1760, the whole trade was 18,650,000 rubles, and the profit 3,413,000 rubles. — From 1758 to 1768, therefore in 11 years, the imports amounted to 114,364,661 rubles, 37½ kopeeks, and the exports to 123,658,217 rubles 91¼ kopeeks. — From 1762 to 1772, likewise in 11 years, the imports were entered at 115,478,313 rubles 71½ kopeeks, and the exports at 148,065,786 rubles 87½ kopeeks; and from 1762 to 1774, in 14 years, the imports rose to 155,115,064 rubles 57½ kopeeks, and the exports to 202,368,705 rubles, 97½ kopeeks*.

In the year	Imports.		Exports.	
	Rubles.	Kop.	Rubles.	Kop.
1762	8,725,065	65½	13,290,030	69½
1763	9,603,984	35½	11,536,931	22½
1764	9,670,618	54	11,493,802	51½
1765	9,226,347	17½	13,161,983	4½
1766	9,175,175	12	11,608,181	—
1767	9,018,129	23	11,810,478	58
1768	10,856,161	75½	12,971,542	37
1769	11,539,022	14½	14,397,041	23
1770	11,374,259	30½	14,989,134	75½
1771	10,726,897	11½	17,136,353	44½
1772	15,562,653	32	15,670,308	2¼
1773	13,571,433	10½	18,141,675	88½
1774	13,595,944	88½	17,603,963	91
1775	12,469,378	87	18,557,279	30½

In 1790 the trade of Petersburg and Riga alone amounted to as much as the trade of the

* Tschulkof, opissanie rossiskii kömmertzii.

whole

whole empire had done in the year 1762, which was then more than twice as much, thus,

The trade of

	Importation.	Exportation.
St. Petersburg - - -	11,000,000 r.	13,000,000 r.
Riga, Arensburg, Per- nau * - - - - }	2,000,000	5,000,000
Reval, Habsal - - -	800,000	600,000
Narva - - - - -	50,000	500,000
Vyborg, Friederich- shamm }	200,000	100,000
Archangel, &c. - -	500,000	2,000,000
Astrakhan - - - -	1,000,000	1,200,000
Taurida - - - - -	1,250,000	1,000,000

The land-trade with

Poland, Silesia, &c. -	2,000,000	500,000
Persia, Georgia, &c. -	200,000	100,000
The Kirghises and Buk- harians - - - - }	1,500,000	1,500,000
China - - - - -	2,000,000	2,000,000

Total	22,500,000	27,500,000
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According to Herrmann, the aggregate of the commerce of the empire, therefore, amounted then to about fifty millions of rubles, whereby Russia gained near five millions annually†. The returns thus

* The commerce of the ports of Livonia and Esthonia, both active and passive, amounted to a sum of nearly ten millions of rubles: therefore, as Mr. Busching observes, if the commerce of those provinces do not prosper, it must be owing to the tyranny of the lords.

† This surplus comes here partly indeed in foreign coin, with which the duties are paid in silver, and which is occasionally applied to other uses; but a good part of this surplus remains

thus made by the russian subjects, exports and imports reckoned together, amounted to fifteen millions, among which those commodities are to be understood which are imported and exported in ships either built or bought in Russia. The subjects, accordingly, have a share of nearly one third, and not, as Marshall says, of nine tenths.

Mr. Chalmers has still more strikingly represented the increase of the trade of the English with Russia since the beginning of the present century, in the following manner:

		Imp. from Russia.	Exp. to Russia.
From 1700 to 1702 yearly		124,220	76,784
1720	1722	146,219	80,713
1740	1742	305,034	77,553
1750	1752	459,410	116,313
1760	1762	622,520	49,233
1770	1772	1,110,093	145,125*

In the year 1784, the ratio of commodities exported and imported at St. Petersburg by the undermentioned nations, was as follow:

	Imports.		Exports.	
	Rubles.	Kop.	Rubles.	Kop.
Russian subjects . . .	6,958,428	22½	2,841,996	91½ †

remains safely lodged in foreign banks, and another considerable portion is spent in defraying the expences of the crown in foreign parts, particularly in times of war. — M. von Boltin estimates this surplus even at five millions. Tom. ii. p. 457.

* In the year 1780 was imported in England from Russia to the value of 1,150,429l. and only of 16,103l. exported.

† In the year 1785, the russian subjects exported for 2,556,307 r. 59½ k. and imported for 6,077,938 r. 97½ k.

English

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	Imports.		Exports.	
	Rubles	Kop.	Rubles	Kop.
English	3,000,935	14½	8,390,755	0½ *
Danes	371,235	59	340,730	48
Dutch	363,657	28½	182,059	42½
Portugueze	239,357	—	156,453	24½
Hamburgers	238,208	35	89,752	39
Spaniards	158,399	10	135,476	4½
Lubeckers	126,159	29½	42,740	3½
French	90,865	82	181,404	49½
Austrians	89,604	85	5,427	20
Swedes	52,711	14½	157,513	33½
Swiss	42,949	35	4,545	49½
Italians	85,671	40	330,554	61
Prussians	16,354	20	6,389	90½
Rostockers	13,753	95	9,688	—
Saxons	12,350	50	—	—
Dantzickers	2,700	20	—	—
Americans	9,787	—	—	—
Merch ^t s and passengers				
of various nations	114,970	60	16,676	59½
Ship-masters	168,544	44½	49,387	95½
Commodities not yet				
made free	15,684	50	—	—
Total	12,172,345	98½	12,941,513	12½

The custom-house receipts from Kiachta in 1784, amounted to 700,000 rubles. The duties

* In the aforefaid year 1785, the exports of the English amounted to 9,035,846 r. 39 k. but their imports only to 2,365,909 r. 14½ k.

In the year 1794, a few english houses in St. Petersburg made contracts for 700,000 poods, or 28 millions of pounds of hemp; to be delivered at the ports of Great Britain alone. Of so much consequence is the hemp-trade to Russia.

on the chinese commodities were at 25, on the russian 23½ per cent. Compare this with the value of the exports and imports, and it will make about three millions of rubles. But the major part of the russian articles are in common sold at a price considerably higher than they are rated at in the books: whereas the chinese goods have generally a fixt taxation, and are entered at the same value as they are disposed of at to the traders. Now add to this the smuggled commodities, which are to a considerable amount, and the total of the imports and exports of Kiachta may be fairly stated at four millions of rubles. — Some russian merchants, particularly M. Shigarof of Mosco, carry on a remarkably great commerce in Kiachta. That person alone in some years deals for at least half a million.

SECTION V.

Of the Internal Commerce.

FROM what has been said it plainly appears how considerable and extensive the EXTERNAL commerce of Russia is at present. But in an empire that has thirty millions of inhabitants, and such a prodigious quantity of commodities brought in and
carried

carried out, the INTERNAL trade must be still more important and valuable. This, for the greater convenience of the reader, may be divided into the SIBERIAN, and the DOMESTIC trade of Russia proper and the newly conquered provinces. — The Siberian commerce is of great consequence; but must be understood peculiarly of the governments of Irkutsk, Kolhyvan, Tobolsk, Perme, and Ufa. All the products of these parts, not consumed in the country itself, or not (as at present, when the commerce is interrupted) disposed of to China or to the Kirghises, go by the interior districts and ports of Russia. The major part, at least of the heaviest commodities, are brought almost entirely from the eastern regions of Siberia, to St. Petersburg. This navigation proceeds from the Selenga to the Baikal, and from the Angara into the Yenissey, from that into the Oby, from the Oby into the Tobol; from here over a tract of land of about 400 versts, as far as the Tshuffovaia, from this into the Kamma, from the Kamma into the Volga; from this, by the sluices at Vishney-Volotshok, into the Volkhof, from the Volkhof into the Ladoga-canal, and from this canal into the Neva. The most of the return or barter of european commodities against Siberian furs, and against Chinese commodities, is carried on in the town of Irbit, in the government of Perme, where a famous fair is held annually in the months

of January and February*. The products carried every year from Siberia to Russia, may be nearly estimated as follow:

	Rubles.
Iron, for the amount of - -	3,000,000
Salt - - - - -	2,000,000
Gold and silver - - - - -	1,700,000
Furs and skins - - - - -	1,000,000
Copper money - - - - -	1,500,000
Copper in pieces - - - - -	500,000
Tallow and leather - - - - -	500,000
Marble, precious stones, &c.	300,000
Chinese tea, &c. (or if the commerce be interrupted, so much the more furs instead) -	1,500,000
All together therefore 12 millions of rubles drawn	

* The chinese and siberian commodities come to this fair as well by land as by water. By land they go from the borders and the remoter districts, by Irkutsk, from thence by Tomsk, thence proceed by Tara, and from Tara by Tobolsk, and from thence over Tiumen to Irbit. They reckon from Kiachta to Irbit, by this road, to be 3914 versts. The way by water is that shewn above: namely, at Kiachta the goods are shipped on the Selenga, and by that brought into the Mare Baikal. Out of this sea they go upon the Angara into the Yenissey as far down as Yenisseisk, where they are unloaded and carried over a short track of land, into the Ket, and on this river into the Oby. From the Oby they then proceed up the Irtysh and the Tobol to Tiumen, where they lie till the season of sledge-ways; or, if they are designed for Russia, are carried by land to the Tshussovaia.

annually

annually by Russia from Siberia; and therefore it has, not unjustly, been called the Russian Peru.

But of yet greater importance is the interior commerce of the Russian provinces interchangeably with each other, and their traffic in the ports and frontier places of the empire, either for bringing thither the commodities designed for exportation, and for fetching thence the goods imported; or for conveying to each other their reciprocal necessities. The greater part, especially to the sea-ports, are likewise here transported by water. The Volga, the king of the rivers of Russia, which connects the Baltic with the Caspian, acts a principal part in this business; and the lists of such commodities as for the last thirty years have annually passed the Ladoga-canal, afford a competent view of the quantity and kinds of those which come to Petersburg alone. The many large and considerable rivers with which the whole empire abounds, are in the highest degree favourable to a very brisk internal as well as to a foreign commerce. Besides the Volga and the Siberian rivers, the principal are the Dvina, on which the navigation is carried on to Archangel; the Duna, which carries vessels to Riga; and the Bogue, Dniepr, and Don, on which articles of commerce are transported to the Euxine.

Several very considerable fairs that are held in various towns and cities of the empire, contribute greatly to facilitate the prosecution of traffic. The most celebrated of these fairs is that at Makarief,

a monastery and city in the government of Nishney-Novgorod, at which the siberian and russian merchants assemble from all parts of the country.

Among the trading cities of greatest note, the principal are St. Petersburg, Riga, and Mosco. The latter is the central point at which all the affairs of the interior commerce of the empire flow together and unite. Here likewise is a numerous and opulent body of mercantile men. In the year 1764 it consisted of 9582 heads; paying a capitaxion-tax at 120 kopeeks per head, of 11,498 rubles, 40 kopeeks. But, as according to the late regulations, those only can be reckoned to belong to the body of merchants, who can make it appear that they possess a capital prescribed by law, numbers of them entered into the class of burghers. Of these there were in 1775 at Mosco 6079 persons; of whom were in the first guild 112 families with 272; in the second guild 496 families with 1041; and in the third guild 824 families with 1424 persons. All together have registered their capitals at 2,530,695 $\frac{1}{2}$ rubles, and pay, in lieu of the head-money, at the rate of one per cent. 25,396 rubles 95 kopeeks.

The aggregate national wealth of Russia, in its annually arising products, may be reckoned with tolerable accuracy in the following manner:

Thirty millions of inhabitants of both sexes, making about 6 millions of families (each at five persons) consume monthly at least 48 millions, in the

the whole therefore 576 millions of poods of all kinds of meal, grits, &c. each pood, on an average, at 25 kopeeks, makes a sum of

rubles 144,000,000*

Brandy is made yearly, and its consumption is about five millions

of eymers, each at three rubles - 15,000,000†

Salt, 12 millions of poods, at 35

kopeeks - - - - - 4,200,000

Gold, silver, lead, copper, iron, &c. 8,750,000

Fine and coarse furs, at least

amounting to - - - - - 5,000,000

Hemp, flax, tobacco, linens, hemp-

oil, linseed-oil, &c. - - - - - 30,000,000

Fire-wood, timber, charcoal, ship-

timber, tar, pitch, &c. - - - 20,000,000

* Rye-meal, the standard by which the value of all things is regulated in Russia, was worth formerly in several provinces, particularly in the Ukraine and in Siberia, less than 25 kopeeks the pood; but at present there are very few places where it can be had at that price. In most places it is much dearer, and in many double that price, and even more than double; accordingly the countryman has greater encouragement to cultivation. The above-stated price of 25 kopeeks is then the lowest at which it could be fixed, and, besides, the corn exported is not comprised. Add this to the account, and also what is consumed in the distilleries, and the quantity of meal produced in Russia will be surely every year 600 millions of poods.

† Brandy and salt I have reckoned at the lawful prices; and all the rest at such sums as come nearest the truth.

Cattle,

	Rubles.
Cattle, leather, wool, milk, pulse, garden-vegetables, &c. - - -	58,050,000
Product of the fisheries - - -	15,000,000
	<hr/>
Total	300,000,000*
	<hr/>

Consequently of this capital comes to each inhabitant an annual share of ten rubles.

By commerce, every year is exported of these products, namely,

In metal-wares to about - - - 3,000,000†

* Marshall, in his travels, estimates the annual produce of Livonia alone at 13 millions of pounds sterling; but that is certainly more than about four fifths too much.

† This sum makes almost the whole of the bar and cast iron, which latter is chiefly disposed of to the asiatic nations. — Sweden exported in twenty years, to the amount of 46,152,962 swedish rix-dollars, in metal-goods; consequently in one year amounting to 2¼ millions of dollars. Russia has therefore got precedence of them already in that article; which is the more remarkable, as Russia used formerly to draw the iron she wanted from Sweden. But it is a well-known fact that Sweden has been the means of greatly promoting the demand for russian iron. For, by the iron-comp-toir established at Stockholm in the year 1748, the price of this metal was so much raised, that the Russians could sell their iron with 20 per cent. profit at Marfeilles, for the price at which swedish iron could not be bought in Stockholm. — It is much to be wished, for the benefit of the country and of such numbers of people who get their bread by the mines, that the Russians do not, as may easily happen, fall into the same error.

In

	Rubles.
In hemp, flax, and all articles prepared from them - - - -	10,000,000
In leather, tallow, furs, and all other products from the animal kingdom - - - - -	8,000,000
In corn, wood, and other petty articles - - - - -	4,500,000 *
	<hr/>
Total	25,500,000
	<hr/>

To this the transport-article, at - 2,000,000

Which together make out the above-mentioned sum of 27½ millions of rubles.

The quantity of money now †, circulating in the empire, may be admitted, as in the following statement :

* From 1771 to 1773, in three years, from all the ports of the Baltic were exported : 2,089,828½ chetverts of rye, at 5,914,561 r. 48½ k. — 271,631¼½ chetverts of wheat, at 1,120,041 r. 14½ k. — 146,572¼ chetverts of barley, at 375,990 r. 83½ k. — 102,712 chetverts of oats at 138,272 r. 7½ k. and 1016½ chetverts of malt at 1866 r. 22½ k. In the three years from 1778 to 1780, only for 4,598,815 r. but afterwards again more corn was exported.

From all the foregoing it is apparent how much the abbé Raynal is mistaken, when he says : “ Toutes les provinces
“ interieures de la Russie sont dans un tel état de pauvreté,
“ qu'on y connoît à peine ces signes de convention (1) qui
“ representent toutes choses dans le commerce.” Hist. philosoph. tom. iii. p. 128. † 1788.

(1) L'argent.

In

	Rubles.
In gold and silver coin, at - -	76,000,000
Copper coin, at - - - - -	54,000,000
Paper money, at - - - - -	100,000,000
	<hr/>
Total	230,000,000
	<hr/>

Add together this sum, and the progressive value of the product, and there appears an annual political revenue of 530, or to confine ourselves to the lowest, of at least 500 millions of rubles.

The quantity of specie is now every year increased :

	Rubles.
By money struck of Siberian gold	
and silver, about - - - - -	1,700,000
By foreign coinage of various sorts	1,300,000
By copper money - - - - -	2,000,000
	<hr/>
Total	5,000,000
	<hr/>

From

From the New Tarif, published at St. Petersburg in 1797, by which the Duties on the IMPORTATION of the principal Foreign Merchandizes here following are received.

	DUTY.	
	R.	K.
ALMONDS, with or without shells, per pood	0	80
Alum, all sorts, per bercovetch - - -	1	0
Antimony - - - - -	0	20
Apples and pears, fresh, per cask of two ankers	0	50
—— salted - - - - -	1	0
—— dried, per pood - - -	0	60
Arack, shrub and rum, per dozen bottles -	7	20
Beads of crystal, per thousand - - -	0	20
—— glass, per pood - - -	1	85
Benzoin, or olibanum, per pood - - -	5	40
Borax, per pood - - - - -	1	50
Brandy, common spanish, portuguese, and others, except sweetened, per anker -	20	0
Butter, per pood - - - - -	1	20
Cacao, per pood - - - - -	2	0
—— untwisted and dyed - - -	10	0
Cambric and gauze, plain, ad valorem, per cent.	0	30
Camels yarn, twisted and dyed, per pood -	12	0
Capers, per pood - - - - -	1	0
Caps, night, of beaver, wove and fulled, per doz.	4	80
—— of ordinary worsted, cotton, and thread -	1	0
Cardamums, per pood - - - - -	12	0
Cheese, parmesan, per pood - - - - -	3	0
—— english, dutch, &c. - - -	0	60
Cherries, dried, per pood - - - - -	0	30
Cinnamon, per pood - - - - -	12	0
	Cloth,	

			DUTY:	
			R.	K.
Cloth, fine broad, per arshine	-	-	0	40
———— broad	-	-	0	30
———— narrow	-	-	0	20
Cloves, per pood	-	-	12	0
Coral, beads of, picked or common, per pound			3	0
Cochineal, per pood	-	-	10	0
Coffee, per pood	-	-	3	20
Cork in pieces, per pood	-	-	0	8
—— for bottles	-	-	2	0
Cotton, white spun, and candlewicks	-	-	0	80
Cotton goods, velverets, plush, thicksets, fustians, baize, and other cotton stuffs, white, coloured, printed, and mixed with thread, per ruble	-	-	0	40
Cotton linens, white for printing, not exceeding 30 kopecks the arshine, per 100 arshines			5	0
—— others, white, fit for the same use, not exceeding 30 kopecks the arshine, and mitcal, per ruble	-	-	0	20
Curema, or turmaric, per pood	-	-	0	30
Currents, per pood	-	-	0	40
Dimity of all sorts, per cent.	-	-	0	30
Emery, per pood	-	-	0	9
Figs, per pood	-	-	0	40
Frankincense, common, per pood	-	-	1	0
Galingal, per pood	-	-	0	8
Ginger, white, clean, and dried, per pood	-	-	0	12
—— grey and black	-	-	0	6
Glass, window of all sorts, ad val. per ruble	-	-	0	30
Gum, arabic, per pood	-	-	0	30
—— guiacum	-	-	1	80
Gum lack, or schellak	-	-	1	0
—— senegal	-	-	0	30
Gun-flints, per pood	-	-	0	28
Herrings, english and dutch, per barrel	-	-	1	80
—— swedish, northern, and others	-	-	0	45
Indigo,				

TARIF OF 1797.

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			DUTY.	
			R.	K.
Indigo, of all sorts (excepting that of Jamaica)				
per pood	-	-	5	8
Lace, thread, ad valorem, per cent.	-	-	0	10
Lead, per bercovetch	-	-	0	80
Lemons and oranges, per chest of 300 each	-	-	0	60
—— salted, per cask	-	-	3	0
—— juice, per anker	-	-	0	60
—— peel, dried, per pood	-	-	0	12
Mace, per pood	-	-	20	0
Madder, per pood	-	-	0	60
Marcasite, per pood	-	-	0	80
Mastick, per pood	-	-	1	20
Minium, per pood	-	-	1	0
Mount-blue	-	-	1	80
Mustard, per pood	-	-	1	50
Mummie, per pood	-	-	0	90
Muslin, ad valorem, per ruble	-	-	0	30
Needles, per thousand	-	-	0	30
Nutmegs, per pood	-	-	12	0
—— flower of	-	-	20	0
Nutgalls	-	-	0	40
Ochre	-	-	0	30
Oil of olives	-	-	0	60
Olives	-	-	1	0
Orlean	-	-	0	60
Orpiment	-	-	1	20
Orseille	-	-	0	30
Oysters, fresh, per barrel of 2 ankers	-	-	5	0
Paper, royal, per ream	-	-	3	0
—— medium	-	-	2	50
—— small	-	-	2	0
—— post	-	-	2	0
—— pro patria	-	-	1	60
—— for cards	-	-	1	0
Pastel, per pood	-	-	0	12
			Pearl	

			DUTY.	
			R.	K
Pearl barley	-	-	0	20
Pencils, lead, common, per doz.	-	-	0	6
———— in cedar wood	-	-	0	24
Pens, for writing, by the hundred	-	-	2	0
Pepper, per pood	-	-	2	0
Pottery, as well porcelaine as earthen ware, stone, and clay, plain and varnished, to serve as utensils, ad valorem, per ruble	-	-	0	40
Prunes, per pood	-	-	6	0
Raisins, per pood	-	-	0	40
Red lead	-	-	0	30
Ribbons, filk, of all forts, plain, ad valorem, per cent.	-	-	0	40
Rice, per pood	-	-	0	20
Roots of violets	-	-	0	16
Saffron, per pound	-	-	0	60
Sal ammoniac	-	-	0	60
Sanguine, or bloodstone, per pood	-	-	0	30
Savonets	-	-	1	0
Scythes, per hundred	-	-	3	0
Sea-green, per pood	-	-	0	30
Sealing-wax, per pound	-	-	1	0
Silk, gold and silver glazets and zirzak, plain, ad valorem, per cent.	-	-	0	40
Silk, velvets plain and of one colour, per pound	-	-	5	0
— stuff, plain and single colour, per pound	-	-	4	0
— gros-de-tours and gros-de-Naples serge and fattins, plain and single coloured, per pound	-	-	3	0
— taffetas and perlians, plain and of one co- lour, per pound	-	-	3	0
— stuffs of coarse filk and filk baize, per ar- shine	-	-	0	40
			Silk,	

TARIF OF 1797.

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	DUTY.	
	R.	K.
Silk, chenille, per pound	5	0
— plush, per arshine	0	50
— grifette, mohair, and all stuffs mixed with filk, camel's hair, cotton, and thread, but plain and of one colour, per cent.	0	30
Skins, otters and beavers, per piece	1	0
Slate, white, per pood	0	24
Spirit of wine, per anker	40	0
Spirits, distilled by sugar and spices, per anker	24	0
Steel, per cask of three poods	1	30
Stockings for men, women, and children, made of flock filk mixed with cotton, of only one colour, per doz. pair	3	0
— filk, white and variegated, of the largest size, per doz. pair	12	0
— ditto, of middling length	9	60
— ditto, for children	4	80
— run with beaver, for men and women, per doz. pair	6	0
— ditto, for children	3	0
— camel's hair, and run with worsted, large sorts, per doz.	1	20
— ditto, ditto, large sorts, per doz. for children	0	60
— ditto, mixed with thread and cotton, of all colours, the largest sort, per doz.	1	0
— ditto, smaller	0	84
— thread and cotton, of all sorts, large, per doz.	2	40
— ditto, smaller	1	20
Storax, per pood	2	0
Succory, ground	4	0
Sugar, raffinade, per pood	2	40
— melis	2	0
— lump	1	60
	Sugar,	

			DUTY.	
			R.	K.
Sugar, candy	-	-	2	40
— raw	-	-	0	30
— raw, refined in Europe	-	-	1	0
Sulphur, per bertovetch	-	-	2	40
Sword-blades, per doz.	-	-	3	60
Syrop; white, per pood	-	-	2	40
— brown	-	-	1	0
Tartar	-	-	0	18
Thread, fine, of all sorts, per pound	-	-	1	20
Tiles, per thousand	-	-	4	0
Tobacco, spanish, portuguese, and italian, per pound	-	-	1	50
— of Brazil and knaster	-	-	0	60
— in rolls and leaves, per pood	-	-	2	40
— cut for smoking	-	-	4	0
— rappee and in carottes	-	-	8	0
Tea, per pound	-	-	1	50
Tools, and instruments for mechanics, per pood	-	-	0	80
Tutenague, per pood	-	-	0	24
Vanilla, per pood	-	-	10	0
Vessels of all sorts, of freestone, glass, wood, and iron, ad valorem, per ruble	-	-	0	40
Verdegris, common, per pood	-	-	5	40
Vinegar of wine and cyder, per hoghead	-	-	1	50
Vitriol of Cyprus, per pood	-	-	1	50
— black	-	-	1	0
— oil and spirit of,	-	-	3	0
Ultramarine, per pound	-	-	3	0
Umber, per pood	-	-	0	10
Wafers, per pound	-	-	2	0
Wine, champagne, per bottle	-	-	0	70
— burgundy	-	-	0	60
— french wines (indirect), per hoghead	-	-	18	0
— port wine (direct)	-	-	4	50
— spanish	-	-	6	50
			Wine,	

		DUTY.	
		R.	K.
Wine, rhenish, moselle, and other german			
wines, per hoghead	- -	18	0
Wite, for needles, per pood	- -	0	12

Merchandises, the Importation whereof is prohibited.

RIBBONS of all sorts, spotted and striped, except plain and single-coloured. Foreign beers of all sorts, porter and mum. Fans. Indigo, common, in balls. All articles of jewellery. Gloves of all sorts. Hats. Coffee-mills. Combs. Buttons. Comfits. Knives and forks. Pins. Paper stained and painted. Parchment. Powder and pomatum. Toys. Ruffles. Furs. Locks. Shoe-blackening. Anise. Indian anise. Looking-glasses. Carpets. Hangings. Snuff-boxes of all sorts.

The following Goods are free of Duty.

DRUGS for apothecaries. Raw cotton. Teazels. Earths and clay. Gold and silver. Wood for furniture and carriages, unwrought. Mathematical, surgical, and musical instruments, but not harpsichords. Mineral and other specimens of natural history. Raw silk. Coals. Mineral waters. Raw wool.

THE duties are paid in dollars of weight, 14 to the pound at the rate of 140 kopecks to the dollar, and besides that 2 per cent. on the amount of the customs.

From the new Tarif published at St. Petersburg in 1797, by which the principal russian products pay the duties on their EXPORTATION.

				DUTY.	
				R.	K.
ANISE-SEED, per pood	-	-	-	0	2
Barley, per chetvert	-	-	-	0	12
Bristles, per pood	-	-	-	0	48
Buck wheat, per chetvert	-	-	-	0	14
Castoreum, per pound	-	-	-	0	30
Caviar, per pood	-	-	-	0	8
Cordage, of hemp, per berkovetch	-	-	-	0	45
——— codilla	-	-	-	0	12
Cow-hair, raw, per berkovetch	-	-	-	0	3
Crab's eyes, per pood	-	-	-	1	0
Drillings, per piece of 60 arshines	-	-	-	0	60
Fish-oil, of all sorts, per cask of 7 poods	-	-	-	0	30
Flax, 12-headed, per berkovetch	-	-	-	3	0
—— 9-headed	-	-	-	2	80
—— 6-headed	-	-	-	2	0
—— codilla	-	-	-	0	50
Furs, fables, beavers, foxes of all sorts, ad valorem, per cent.	-	-	-	0	6
—— mountain-fox, pole-cats, ermines, martens, and other particular kinds, ad valorem, per cent.	-	-	-	0	10
Hare hair, per pood	-	-	-	3	0
Hemp, clean, per berkovetch	-	-	-	1	80
—— outshot	-	-	-	1	40
—— half clean	-	-	-	1	0
—— codilla	-	-	-	0	30
Hempseed, ordinary, per chetvert	-	-	-	0	24
—— oil and linseed oil, per pood	-	-	-	0	20
Hops, per pood	-	-	-	0	20

Horsetails,

		DUTY.	
		R.	K.
Horsetails, per hundred	-	0	10
----- hair, raw or boiled, per berkovetch	-	0	50
Iron, old and broken, per berkovetch	-	1	0
----- in bars of all sorts	-	0	40
----- in lumps not wrought	-	0	80
Ifinglass, book and staple, per pood	-	1	50
Leather, neat's, prepared, by tens	-	0	60
----- horse, tanned	-	0	25
----- sheep, tanned on both sides	-	0	8
----- sheep-skins prepared	-	0	10
----- red or yufts, per pood	-	0	90
----- for soles	-	0	20
----- calf, tanned, by tens	-	0	10
Linen, white, per 1000 arshines	-	5	0
----- unbleached	-	4	0
----- bale	-	1	0
----- flens, per pieces of 50 arshines	-	0	50
Linseed, ordinary, per chetvert	-	0	30
Malt, per berkovetch	-	0	12
Mats, double or single, old or new, per piece	-	0	12
Oats, per chetvert	-	0	8
Pearlash, per cask	-	0	50
Pitch, per pood	-	0	1
Potash, per berkovetch	-	1	50
Raventuchs, per piece of 50 arshines	-	0	40
Rhubarb, per pood	-	6	0
Rosin, per berkovetch	-	0	30
Rye and flour, per chetvert	-	0	6
Sailcloth, per 50 arshines	-	0	40
Saltpetre, per pood	-	0	60
Skins, lamb, white and motly, per 100	-	1	0
----- ditto black	-	2	50
----- hare, white, per 1000	-	6	0
----- grey	-	17	50
Soap of all sorts	-	0	10
113		Soda	

				DUTY.	
				R.	K.
Soda	-	-	-	0	3
Tallow of all sorts, per berkovetch	-	-	-	4	0
—— candles, per pood	-	-	-	0	20
Tobacco, leaf, per pood	-	-	-	0	3
Wax, white and coloured, per pood	-	-	-	1	0
—— yellow	-	-	-	1	20
—— candles	-	-	-	0	40
Wheat, per chetvert	-	-	-	0	10

Goods that pay no Duties on Exportation.

STEEL. Indian anise. Down. Pine-apples. Fish.
Honey. Cummin. Printed linen and buckram. Glue.
Gunpowder. Sulphur. Tea. Indian ink. Napkins and
table-cloths bleached and made up. Chintzes and cottons.
Thread.

Goods, the Exportation whereof is prohibited.

UNDRESSED sheep-skins, seal-skins, and otter-skins. Buck-
skins, deer-skins, and calf-skins dried. Goat-skins, ox-hides,
and horse-hides, raw, dried, and salted. Gold and silver.
Gold, silver, and copper coin, and bank notes of Russia.

THESE duties are paid in the currency of the country; and
besides one per cent. on the amount of the duties received.

Value

*Value of the Ruble by the Course of Exchange
at St. Petersburg, 1797.*

	DUTCH STUYVERS.			PENCE STERLING.			HAMBURG SCHILLINGS.		
	Highest	Mean	Lowest	Highest	Mean	Lowest	Highest	Mean	Lowest
January	$32\frac{1}{4}$	$31\frac{1}{8}$	$31\frac{1}{2}$	32	$31\frac{1}{3}$	$31\frac{1}{4}$	27	$26\frac{7}{8}$	$26\frac{1}{2}$
February	$32\frac{1}{4}$	32	$31\frac{1}{2}$	$32\frac{1}{2}$	$32\frac{1}{4}$	$31\frac{3}{4}$	28	$27\frac{3}{4}$	$26\frac{3}{4}$
March	$32\frac{1}{4}$	$30\frac{3}{4}$	—	$32\frac{3}{4}$	31	$30\frac{1}{2}$	28	$27\frac{3}{4}$	$26\frac{1}{2}$
April	31	$30\frac{1}{4}$	—	$31\frac{5}{8}$	$30\frac{1}{2}$	—	27	$26\frac{3}{4}$	$26\frac{1}{8}$
May	$30\frac{3}{4}$	$30\frac{1}{2}$	$30\frac{1}{4}$	31	$30\frac{3}{4}$	$29\frac{3}{4}$	27	$26\frac{3}{4}$	$26\frac{3}{8}$
June	$29\frac{3}{4}$	$28\frac{3}{4}$	—	$29\frac{1}{2}$	$28\frac{1}{4}$	—	26	$25\frac{3}{4}$	$25\frac{1}{4}$
July	29	$28\frac{3}{4}$	$28\frac{1}{4}$	29	$28\frac{3}{4}$	28	$28\frac{1}{8}$	$25\frac{1}{2}$	$25\frac{1}{4}$
August	$29\frac{3}{4}$	$29\frac{1}{2}$	$28\frac{3}{4}$	$29\frac{1}{2}$	29	$28\frac{1}{4}$	$26\frac{1}{4}$	$25\frac{3}{4}$	$25\frac{1}{4}$
September	$29\frac{1}{4}$	$28\frac{1}{2}$	$28\frac{3}{8}$	$28\frac{3}{4}$	$28\frac{1}{4}$	$27\frac{3}{4}$	$25\frac{7}{8}$	$25\frac{3}{4}$	$25\frac{5}{8}$
October	$29\frac{1}{4}$	$28\frac{1}{8}$	$28\frac{1}{4}$	$28\frac{5}{8}$	$28\frac{1}{8}$	$28\frac{1}{4}$	$26\frac{1}{4}$	$25\frac{5}{8}$	$25\frac{1}{2}$
November	30	$29\frac{1}{4}$	$29\frac{5}{8}$	$28\frac{1}{2}$	$28\frac{1}{4}$	$28\frac{1}{2}$	$26\frac{1}{2}$	$26\frac{1}{4}$	$26\frac{1}{8}$
December	$29\frac{1}{4}$	$29\frac{1}{2}$	$29\frac{1}{4}$	$28\frac{1}{2}$	$27\frac{3}{4}$	$27\frac{3}{4}$	$26\frac{1}{2}$	26	$25\frac{3}{4}$

Value in rubles of the Merchandises imported and exported by merchants and other persons of different nations at St. Petersburg and Cronstadt in 1797.

	Imported	Exported
Russians - - -	12,359,005	11,827,209
English - - -	4,936,851	19,749,180
Austrians - - -	580,530	370,131
Swedes - - -	9,314	1,870
Danes - - -	148,288	13,125
Hollanders - - -	1,300	
Spaniards - - -	41,451	66,327
Portuguese - - -	260,769	205,460
Prussians - - -	14,709	290
Lubeckers - - -	32,943	19,623
Hamburgers - - -	203,416	12,603
Italians - - -	14,099	
Swiss - - -	40,364	
French - - -	306,602	10,831
Merchants of other nations and passengers }	284,563	19,893
Captains or masters of ships	131,855	154,369
Total	19,366,059	32,450,911
Thus the exportation exceeds the importation by }	13,084,852	
In 1796 the value was -	26,355,890	37,110,333
Therefore this year 1797 is a decrease of }	6,989,831	4,659,422

Amount

*Amount of all the Duties and Imposts received at
the Custom-house in 1797.*

Duties in dollars 1913 poods	} which make in		
in ducats 13 poods		rubles	-
in money of the country		-	-
			1,662,573
			1,359,868

Other Duties, viz.

from the towns	-	-	47,591
of different denomination	-	-	79,045
		Total	3,149,077
In 1796 the amount was	-	-	3,504,643
Therefore, this year, 1797, there is a decrease			355,566

Gold and Silver imported.

	pood	lb.	selotn.	rubles
Gold in ducats 7620	1	25	30½	29,500
in different species	—	30	67	11,203
Silver in bars 31	51	18	—	63,314
in 398,147 Albert dollars	678	26	24½	770,361
in different species	—	—	42	114
		Total		874,492
In 1796 the amount was	-	-	-	290,796
Therefore, in 1797 there was an increase of				583,696

*Goods imported at St. Petersburg, 1797, with their
amount in rubles.*

	Rubles.
APPLES and pears, fresh	92,685
——— dried, 513 pood	2,682
Alabaster, marble and gypsum, wrought and un-	
wrought	248,864
Alum, 30,012 pood	116,822
Aloes, 335 pood	4,912
Anchovies and sardells, 230 pood	2,431
Animals, horses	140,075
——— oxen, cows, &c.	3,825
——— fowls and birds	12,330
Antimony, 383 pood	2,669
Apothecary-drugs	215,513
——— medicines	5,701
Beaver-skins, 24,307 skins	191,781
Beer and porter, 4500 casks	327,350
Books, printed	95,696
Borax, 378 pood	14,742
Butter, 707 pood	6,175
Cacao, 327 pood	5,927
Camphire, 150 pood	10,079
Capers, 169 pood	3,747
Cardamums, 340 pounds	838
Cards, for play, 2346 dozen	4,823
Cheese, parmesan, 584 pood	10,641
——— of several sorts, 7935 poods	57,066
Cherries, dried, 771 pood	4,647
Chocolate, 43 pood	2,694
Cinnaber, 530 pood	33,088
Cinnamon, 390 pood	23,125
Clocks	10,341
Cloaths, old and new	10,919
	Cloths,

IMPORTS OF 1797.

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	Rubles.
Cloths, fine broad, 522,694 arshines	- 2,456,846
— small ordinary, 1,315,670 arshines	- 2,284,240
— edges, 478,984 arshines	- 9,544
— half or spagnolets, 35,618 arshines	- 61,309
Cloves, 1147 poods	- 128,431
Cochenille, 1000 poods	- 287,666
Coffee, 22,686 poods	- 516,764
Colours, of various sorts, 5337 poods	- 28,163
— fine sorts	- 5,847
— miniature colours	- 8,705
Copper and brass, wrought and unwrought, 364 poods	- 8,137
Cork-wood, 9713 poods	- 46,867
— cut for bottles, 1468 poods	- 42,011
Cotton-goods, raw, white, and dyed, 174 poods	13,522
— calicoes and mitkal, 2,079,480 arshines	738,515
— muslin, 64,986 arshines	51,723
— cambrick and batiste, 3476 arshines	7,125
— velverets, stuffs stitched, &c. 313,328	170,795
— chintz, 110,009 arshines	43,610
— canefas, 29,469 arshines	16,692
— sundry cotton stuffs, 36,066 arshines	17,852
Coverlets of various sorts	- 17,175
Crystal tartari, 497 pood	- 9,271
Crucibles and matrices	- 6,354
Curcuma, 2201 poods	- 42,598
Curiosities, natural and mineral	- 38,203
Currants, 4207 poods	- 19,383
Cummin or caraways, 89 poods	- 501
Crayops	- 3,633
Diamonds and precious stones	- 47,250
Fish, herrings, swedish and northern, 23,800 barrels	165,833
— english and dutch, 475 barrels	- 24,926
— sundry other kinds smoked, &c.	- 2,370
Flesh, smoked, dried, salted; tongues and sausages, 947 poods	- 11,355
	Furs,

	Rubles.
Furs of various kinds	147,606
Gall-nuts, 2314 poods	52,087
Garden-seeds and plants	13,617
Ginger, 3233 poods	48,371
Glass-ware	10,162
— window	8,946
— enamel, 157 poods	2,718
Gold and silver plate and wire	3,340
Gum, senegal and arabic, 187 poods	3,718
— fundry other sorts, 229 poods	8,772
— frankincense, common, 1182	9,786
— benzoin, 224 poods	11,619
Handkerchiefs, silk	4,513
— cotton	32,627
— linen	2,475
Hops, 203 poods	4,392
Indigo, 6305 poods	1,030,029
Instruments for mechanics	85,376
— musical	49,214
— mathematical and surgical	13,951
— strings for musical instruments	1,813
Ivory and tortoise-shell	3,614
Lead, 37,894 poods	122,140
— ore	2,389
— pencils	1,437
Lemons and oranges, fresh	219,478
— peel dried, 5064 poods	29,140
— dried, 993 poods	7,388
— salted, 262 pipes	18,001
— juice, 760 ankers	13,952
Linen of various sorts, 51,181 arshines	67,849
Madder, 13,873 poods	126,564
Maftick, 155 poods	8,666
Mustard, 462 poods	6,817
Nails, brass and tin, 266 poods	11,828
Needles, 58 millions	56,410
Nuts,	

IMPORTS OF 1797.

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	Rubles.
Nuts, wallnuts, filberds, pistachio, chesnuts, &c.	6,602
Oil, sweet, 14,089 poods	182,485
— of various sorts	11,364
Olives, 150 poods	1,955
Otter skins, 8517 skins	74,809
Paper, post, 2950 reams	25,658
— patria, 5861 reams	37,510
— cards, notes, &c. 1950 reams	10,814
— royal and medium, 495 reams	8,647
— printing paper, and coarse	5,258
— music paper, ruled and notes	5,543
Pearls and corals	6,815
Pearl-barley, 9871 poods	35,885
Pepper, 3481 poods	69,604
Pictures and engravings	115,680
Prunes, 10,200 poods	38,989
Quicksilver, 983 poods	73,540
Raisins, 313 poods	1,932
Razors, 5148 dozen	13,380
Ribbons, plain, of sundry sorts	14,362
Reeds of various kinds	17,028
Rice, 27,172 poods	100,190
Sacharum Saturni, 1590 poods	36,850
Saffron, 466 pounds	5,462
Sago, 85 poods	1,050
Sal ammoniac, 1258 poods	30,417
Saps, sundry	1,285
Scythes, 288,910	135,410
Sheet-yellow, 322 poods	12,833
Shoemaker's awls	7,807
Silk goods, velvets, 13,117 arshines	92,226
— fattins, 13,368 arshines	23,590
— taffety and gros de tours 17,366	16,379
— various other silks, 1,780 arshines	1,886
— raw and dyed silk, 1587 poods	482,695
Sealing-wax, 16 poods	1,391
	Silver,

	Rubles.
Silver, wrought	47,666
Soap, 144 poods	3,062
Spectacles and glasses	4,039
Spelter, 9516 poods	58,900
Steel, 1220 poods	10,143
Stockings, silk, 363 dozen	20,767
———— worsted and yarn, 5540 dozen	53,597
———— cotton and thread, 2250 dozen	32,331
Stone-ware, vessels of earth and clay	96,250
———— porcelaine and potters earth	16,359
———— quarry, mill, whet and grindstones	11,948
———— tripoly, pumice, emery, serpentin and bloodstone	13,423
———— tiles and bricks	5,655
———— gun-flints, 185 poods	2,727
———— coals	12,600
———— amber	2,340
Storax, 59 poods	4,503
Sugar, raw, 11,104 poods	128,653
Sugar rafinade, 139,717 poods	2,791,845
———— molasses, 14,360 poods	250,973
———— loaf, 3583 poods	56,593
———— candy, 412 poods	9,493
Syphons of various sorts, 1186 doz.	7,040
Tartar, 1209 poods	9,150
Tea, 42 poods	4,353
Terebinth and varnish, 3006 poods	24,478
Tin, 5595 poods	81,678
———— 389,170 plates	44,743
Tobacco, smoking, 532 poods	13,633
———— snuff, 549 poods	15,666
———— roll and leaf, 2330 poods	24,157
Trinkets	47,251
Verdegris, 800 poods	39,254
Violet-roots, galingal, &c. 853 poods	15,256
Vitriol, 474 poods	1,693
Vitriol,	

IMPORTS OF 1797.

495

	Rubles.
Vitriol, oil, 1753 poods - - -	17,966
Wares, sundry shop-wares - - -	16,294
— not named in the tarif - - -	50,467
— utensils of brass, tin, &c. - - -	11,339
Waters, mineral - - -	41,717
— sweet-scented - - -	8,986
Wines, french (indirect), 3640 hogsheads -	367,223
— portuguese (direct and indirect), 4441 -	319,982
— spanish (direct and indirect), 1903 -	118,704
— greek and other light table wines, 697 -	110,404
— rhenish, moselle, &c. 210 hogsheads -	37,544
— italian (direct and indirect), 380 hogsheads -	20,770
— burgundy, 6140 bottles - - -	10,784
— liquors, strong, 3180 bottles - - -	8,680
— brandy, 2702 ankers - - -	46,444
— arrack, rum and shrub, 698 ankers -	33,825
— sweet brandy, 144 ankers - - -	9,961
Woods, red sandal, 7910 poods - - -	35,556
— blue, 22,949 poods - - -	60,487
— yellow, 3748 poods - - -	9,912
— sundry other dyeing woods, 3588 - - -	27,643
— for carriages, furniture, &c. - - -	88,038
— garden and forest-trees - - -	25,153
— wooden-ware - - -	851
Woollen and camlet goods, baize, broad, 113,708 arshines - - -	148,180
— — narrow, 493,639 arshines - - -	352,846
— — tammies, 265,632 arshines - - -	118,937
— — camlets, 39,894 arshines - - -	17,705
— — flannels, 57,043 arshines - - -	18,672
— — sundry stuffs, 25,849 arshines - - -	20,717
— — flag-cloth, 164,655 arshines - - -	39,006
— — carpets and hangings - - -	20,166
— — wool of several kinds, 428 poods - - -	16,671
— — camlet yarn, 182 poods - - -	19,148

Total 19,367,954

PRODUCTS

**PRODUCTS EXPORTED *from all the Ports of
the Russian Empire, except those of the Caspian,
in the year 1793.***

Products.	Quantity.	Value in rubles.
Hemp and heads of hemp	2,774,728 pood	6,066,615
Iron in bars and sorted	- 2,995,332	5,159,692
Flax and heads of flax	- 1,146,125	4,504,100
Tallow and tallow-candles	- 1,069,253	4,449,000
Corn, rye, wheat, barley, oats, and flour	22,909 last,	
208,526 chetv.	- -	3,123,005
Sailcloth, facking, and raventuch	- -	2,408,670
Yufts and leather	- ,	2,249,701
Mafts, balks, deals, and various kinds of wood		1,744,208
Linen and napkin-cloth	- -	1,678,701
Linfeed and hempfeed	141,210 ton, 65,721 ch.	1,111,554
Hogs' bristles	- - 36,717 pood	742,513
Hemp-oil and linfeed-oil	235,687	697,366
Ifinglas	- - 6,221	451,530
Skins and furs	- -	396,317
Potashes	- - 114,895	394,438
Wax and wax-candles	- 18,874	378,303
Cables and cordage	- 103,667	259,590
Mats	- - - 1,936,126 pieces	248,557
Kaviar	- - 37,950 pood	188,397
Pitch and tar (with 788 ton of rofin	- - - 341,239	150,581
Butter	- - 23,527	120,334
Train-oil	- - 43,504	106,332
Soap	- - 21,489	87,440
Feathers and down	- 10,551	85,168
Corn-brandy and other spirits	3971 osh. 9 ankers	66,218
Sundry shop goods	- -	58,865
Sheep-wool	- - 23,797 pood	45,805
		Plate

EXPORTS IN 1793.

497

Product.	Quantity.	Value in rubles.
Plate iron, kettles, and other cast-iron ware -	37,917	44,433
Horse-hair (with 63,054 horse- tails) - - -	15,456	42,802
Beef (with 33,862 neats-tongues)	7,674	41,833
Salt - - -	168,296 chetv.	23,679
Apothecary's drugs (incl. 22½ pood rhubarb -		19,871
Tobacco - - -	8,924 pood	19,240
Gold and silver ware, 13 pood, 29 pound -		16,005
Glue - - -	2,041 pood	15,184
Castoreum - - -	11½	14,810
Tea - - -	255	13,404
Pease and grist, 3084 pood, 695 chetv.		11,072
Shoes, boots, slippers, and kangees - -		10,625
Fish, 7073 pood, 70 tons - -		10,440
Carriages, calashes, &c. -		9,750
Trinkets - - -		7,745
Mammoh's bones and morse teeth 190 pood		6,163
Honey and syrup - - -	1,142	5,572
Anise and cummin - - -	1,573	5,532
Raw cotton - - -	93	4,238
Wrought and unwrought copper 187		2,910
Live oxen and cows - -	89 head	1,643
Horses - - -	17	1,282
Garden-seeds - - -	155 tonn.	1,621
Total Export		<u>37,328,192</u>

*A more particular Specification of some of the
Products exported in the foregoing List.*

Products.	Quantity.	Value in rubles.
Hemp, clean - -	2,223,065 pood	5,031,270
—— outshot - -	154,701	324,086
—— half clean - -	248,183	512,576
—— codilla - -	148,779	198,683
Bar-iron - -	2,503,757	4,258,228
Sorted - -	491,575	901,464
Flax, 12-headed - -	868,327	3,664,485
—— 9-headed - -	154,231	556,580
—— 6-headed - -	83,616	227,039
—— codilla - -	39,951	55,996
Tallow - -	1,035,529	4,279,090
Tallow-candles - -	33,724	169,910
Rye and rye-flour, 15,858 lafts, and 2 chetv.		1,379,001
Wheat and wheat-flour, 3623 lafts, & 206,128 ch.		1,490,356
Barley and barley-meal, 3162 lafts, and 525 chetv.		236,044
Oats, 266 lafts, and 1871 chetverts -		17,604
Sailcloth, 50,466 pieces, and 78 fails -		846,351
Coarse linen for facking 1,407,950 arshines		91,153
Raventuch - -	99,575 pieces	1,471,166
Yufts or ruffia leather -	124,340 pood	1,942,984
Leather, tanned, calf, goat, &c. 40,965 skins		56,065
Pump and sole leather -	25,432 pood	250,652
Mafts - -	891 in numb.	43,063
Spars - -	2,158	19,999
Bowsprits and yards -	195	5,830
Balks of various sorts -	128,936	163,118
Deals, pine and fir -	2,956,671	1,026,190
Carriage-poles - -	26,677	375,967
Lath-wood - -	14,135	51,775
Pipe-staves - -	64,981	25,463
Sundry other kinds of wood -		32,803
		Fine

EXPORTS IN 1793.

499

Products.	Quantity.	Value of rubles.
Fine linen - -	486,144 arshines	85,554
Printed linen -	36,154	6,403
Fine diaper, with 280 table-cloths, and 869 napkins, 3984 arshines - -	-	5,586
Ordinary diaper -	608,455 arshines	123,031
Flemish linen - -	55,853 pieces	1,158,788
Calimanco - -	813,872 arshines	254,520
Bierenzeug - -	159,473	44,819
Linseed, 119,939 tonn. and 65,716 chetverts		1,037,513
Hempseed, 21,271 tonn. and 1 chetvert		74,041
Sables - 44 skins, and 1 sack		442
Fox and marten-skins 1754 26 sacks		8,543
Ermine and rock-fox 7186 29 -		13,309
Wolf-skins and furs 348 56 -		3,325
Squirrel-skins - 122,810 2,897 -		26,712
White-hare and cat-skins - - 98,033 2,113 -		31,723
Grey-hare skins - 509,237 - -		266,215
Lambskins - 19,347 517 -		14,864
Bearskins - 1,513 - -		18,013
Sheepskins - 580 - -		4,886
Muffs and sundry furs - - -		8,305

Duty free, and therefore are exported without declaring their value :

Printed books, 8812, and

Pictures and copper-plate engravings, 26,178.

Few readers need be informed that some articles which are not permitted to be sent abroad, as salt and spirits, are not to be regarded as exportation, but only as transportation from one port of Russia to another.

From the foregoing lists are seen at one view the main articles of export, or the sources of the national wealth of Russia. They are 50 in number, following each other in regular succession according to their importance. The chief production of the russian empire is therefore hemp; next follow iron, flax, tallow, corn, sail-cloth, leather, wood, &c.—These 8 articles of themselves make nearly 30 millions.

List of the several Ports, and the Share which each had in the foregoing Exports, valued in Rubles.

	Rubles.
St. Petersburg	23,757,954
Riga	8,985,929
Archangel	2,525,208
Taganrok	428,087
Eupatoria	334,398
Narva	238,555
Otchakof	209,321
Pernau	189,131
Cronstadt	157,365
Kherfon	147,822
Vyborg	124,832
Reval	109,897
Feodosia	54,281
Friedrichshamm	31,374
Kertsch	9,960
Onega	9,552
Arensburg	9,346
Yenikaly	4,322
Sevastopol	858
	<hr/>
	37,328,192
	<hr/>

*Comparison of the Amount of the Exportation in
1768 with that of 1793 in Rubles.*

	In 1768.	In 1793.	Increase of exp. 1793.
Iron - -	1,443,000	5,159,000	3,716,000
Tallow - -	750,000	4,279,000	3,529,000
Hemp - -	2,795,000	6,066,000	3,271,000
Flax - -	1,683,000	4,504,000	2,821,000
Wheat - -	177,000	1,490,000	1,313,000
Wood, various kinds - -	585,000	1,744,000	1,159,000
Yufis and leather	1,115,000	2,249,000	1,134,000
Rye - -	577,000	1,379,000	802,000
Bristles - -	88,000	742,000	654,000
Linfeed - -	433,000	1,037,000	604,000
Sail-cloth - -	281,000	846,000	565,000
Hemp and linfeed oil - -	255,000	697,000	442,000
Isinglass - -	79,000	451,000	372,000
Potashes - -	57,000	394,000	337,000
Wax and candles	77,000	378,000	301,000
Hare-skins - -	58,000	266,000	208,000
Mats - -	59,000	248,000	189,000
Cables and cord- age - -	85,000	259,000	174,000
Kaviar - -	41,000	188,000	147,000
Tallow candles	64,000	169,000	105,000
Pitch, tar, rosin	82,000	150,000	68,000
Soap - -	48,000	87,000	39,000
Train-oil - -	80,000	106,000	26,000
Small iron wares	20,000	44,000	24,000
	<u>21,193,000</u>	<u>63,575,000</u>	<u>42,382,000</u>

*Of the following Articles the Export was lower
in the last-mentioned Year:*

	1768.	1793.	Excess of 1768.
	Rubles.	Rubles.	Rubles.
Furs - -	490,000	396,000	94,000
Raw and wrought copper	53,000	2,910	50,090
Live oxen - -	31,000	1,643	29,357
Hemp-seed - -	93,000	74,000	19,000
Rhubarb - -	8,200	2,467	5,733
	<u>675,200</u>	<u>477,020</u>	<u>198,180</u>

The value of the exports of the above 29 articles in the year 1793 exceeded, therefore, the value of the same articles in 1768 by 21,801,820 rubles.

*Course of Exchange at St. Petersburg in Bank-
Notes with 1 per Cent.agio.*

		On Amsterdam at 65 days date per ruble. Dutch stuyvers.		On London at 3 months date per ruble. Pence Sterling.	
1790.	Dec. 31.	28½	28½	29¼	29½
1791.	Dec. 30.	27½	28	0	29½
1792.	Dec. 31.	26½	26½	0	28
1793.	Dec. 30.	25½	25½	25½	25½
1794.	Dec. 29.	0	25½	0	28½
1795.	Dec. 28.	30½	30½	33	32½
1796.	Dec. 30.	31½	31½	32½	32
1797.	Dec. 29.	29	29½	27½	27½

Number

*Number of British and American Ships arrived
at St. Petersburg.*

	British.	American.
In 1791	525	20
1792	606	24
1793	542	30
1794	533	43
1795	529	42
1796	684	59
1797	440	26
1798	619	39
1799	456	62

*The following List will shew the Rise in the Price
of the Russian Exports.*

	In 1767.	In 1795.
A pood of iron cost 65 to 74 kop.	1 ruble, 40	to 65 kop.
A pood of hogs' bristles, best	5 rubles 20	
to 30 kop.	-	20 to 21 rub.
A pood of kaviar	2	5½ 6
A berkovetch of flax, best	21 to 22	53 58
second sort	18	43 54
heads	4½ 6	6 8
A berkovetch of hemp, best	15 15½	41
second sort	14 30	
third sort	12 13	27 28
heads	4 4½	14 15
Fine yufts, the pood 5	55 to 80	14 15½
Copper, per pood	7 8	70 16½
	к к 4	Raventuch,

	In 1767.		In 1795.	
Raventuch, per piece -	5½		12	14½
Flemish linen, per piece	6	75	18	20
Sail-cloth, per piece -	5½		22	26
Diaper, per 1000 arshines	70.		160	
Ticking of Zatrapeznof, per arshine 50 kopeeks - - -				1 ruble 20 to 30 k.
Hare-skins for hats, per 1000 - - -	140	150	525	560

*Goods imported at St. Petersburg in 1796, with
their Amount in Rubles.*

	Rubles.
ALABASTER, marble and stucco, wrought and unwrought - - -	123,237
Ale and porter, 7033 casks - - -	469,217
Almonds, 9938 poods - - -	124,194
Aloes, 604 poods - - -	16,686
Alum, 38,610 poods - - -	192,296
Animals; horses - - -	152,850
———— oxen, cows, &c. - - -	6,100
———— to stuff - - -	6,528
———— fowls, living - - -	5,024
Antimony, 977 poods - - -	7,404
Apples and pears, fresh - - -	45,890
fundry other fruits, fresh - - -	512
Apples and pears, dried, 791 poods - - -	4,995
fundry other fruits, dried - - -	921
Arms - - -	2,094
Barley, peeled, 7914 poods - - -	35,381
Beads, glass, 1185 poods - - -	13,390
5	Beaver-

IMPORTS OF 1796.

305

	Rubles.
Beaver-skins, 9595 skins	74,225
Books, printed	47,075
Borax, 475 poods	18,552
Brass furniture for commodores, cabinets, doors, &c.	30,428
Butter, 652 poods	6,125
Cacao, 377 poods	5,359
Camphire, 445 poods	41,361
Canes	5,081
Capers, 643 poods	17,577
Cardamums, 64 pound	1,700
Cards, for play, 3337 dozen	6,552
Cerusi, 6,701 poods	44,025
Cheese, parmesan, 1251 poods	23,370
— all other sorts, 7117 poods	52,729
Cherries, dried, 197 poods	1,665
Chocolate, 52 poods	1,620
Cinnaher, 326 poods	20,968
Cinnamon, 200 poods	12,671
Clocks	10,478
Clothes, old and new	31,445
Cloths, fine broad, 624,191 arshines	3,115,032
— small ordinary, 1,836,802 arshines	3,851,990
— half, or espagnolettes, 64,242 arshines,	116,866
— edges, 843,691 arshines	16,750
Cloves, 421 poods	53,657
Cochineal, 1989 poods	483,972
Coffee, 39,525 poods	833,692
Colours, divers	6,500
Copper, 60 poods	1,500
Corals	4,670
Cork, in pieces, 9770 poods	44,650
— cut for bottles, 1859 poods	32,410
Cotton-goods; raw, white, and dyed, 121 poods	10,355
— spun and dyed, 16 pood	2,210
Cotton,	

	Rubles.
Cotton, calicoes, white and mitkal, 3,387,977 arshines	1,240,736
— muslin, 136,944 arshines	135,522
— cambric and batiste, 270 arshines	853
— velverets, 213,986 arshines	136,222
— stuffs, stitched and quilted, 8548 arshines	11,272
— chintz, 35,466 arshines	21,115
— fustian, 3278 arshines	1,270
— stuffs, sundry, 75,275 arshines	33,665
— thicksets and plush, 1619 arshines	1,180
— canifasses, 5046 arshines	5,819
— handkerchiefs, 6430 dozen	60,876
Coverlets, several sorts	10,372
Cristal-saturni, 910 poods	19,836
— tartari, 941 poods	11,391
Crucibles and matrices	4,227
Curcuma, 906 poods	19,298
Curiosities, natural and mineral	146,355
Currants, 7769 poods	22,733
Diamonds and precious stones	66,900
Drugs, raw	313,656
— prepared	6,206
Figs, 3435 poods	20,984
Fish; herrings, swedish and northern, 35,276 barrels	275,402
— english and dutch, 365 barrels	19,035
— smoked, salted, and dried	3,408
Flesh, smoked, salted, and dried, also tongues and sausages, 851 poods	10,288
Furs, various sorts	132,545
Galingal, 397 poods	9,510
Gall-nuts, 524 poods	8,315
Garden-seeds and plants	16,222
Ginger, 1553 poods	27,767
Glass, window	3,576
	Goods

IMPORTS OF 1796.

507

	Rubles.
Goods not mentioned in the tarif	92,295
— of white iron, japanned	9,326
Gum, fenega and arabic, 2517 poods	54,779
— fundry sorts, 651 poods	19,873
— frankincense, common, 212 poods	1,953
— benzoin, 393 poods	22,139
Hops, 743 poods	10,110
Indigo, 10,287 poods	1,599,990
Instruments of iron and steel for mechanics	81,756
— musical	70,853
— mathematical and surgical	6,051
— strings for musical instruments	3,181
Iron, white, 422,275 plates	63,230
— double plates, 16,000	6,700
Ivory and tortoise-shell	6,538
Lead, 55,473 poods	174,042
— ore, red and black, 433 poods	2,610
— pencils, common, 5871 dozen	876
— fine, 538 dozen	943
Lemons and oranges, fresh	238,338
— peel, 1246 poods	6,405
— dried, 363 poods	2,934
— salted, 59 pipes	3,300
— juice, 2702 ankers	9,623
Linen, 64,150 arshines	82,158
Madder, 24,824 poods	241,690
Mastick, 65 poods	2,640
Mercery	23,572
Miniature-colours	2,287
Minium, 508 poods	2,608
Mount-blue, 183 poods	6,620
Mustard, 1026 poods	18,382
Nails, brass and tin	7,895
Needles, 28½ millions	28,367
Nuts; nutmeg, 58 poods	23,951
	Nuts;

	Rubles.
Nuts; mace, 300 pounds	4,271
—— hazel, wall, cocoa, and pistachio	6,545
Oil, perfumed.	24,710
Oysters	15,301
Orlean, 608 poods	15,339
Olive-oil, 24,975 poods	250,377
Olives, 653 poods	12,710
Orpiment, 207 poods	5,110
Orseille, 223 poods	3,651
Otter-skins, 11,996 skins	105,148
Paper; post, 4442 reams	32,880
—— patria, 3267 reams	20,601
—— imperial, royal, and medium, 400 reams	9,753
—— cards, notes, and other sorts	7,720
Pearls	6,600
Pepper, 6797 poods	131,346
Pictures and sculptures	352,712
Pimento, 682 poods	7,050
Prunes, 6236 poods	27,347
Quicksilver, 308 poods	21,595
Quills, 144 thousand	3,008
Raisins, 13,767 poods	49,627
Razors, 3590 doz.	12,001
Reeds, for weaving	4,525
Ribands, even, sundry sorts	7,306
Rice, 18,661 poods	78,060
Saffron, 610 pounds	8,375
Sago, 42 poods	621
Sal-ammoniac, 2315 pood	62,870
Saps, sundry	2,491
Sealing-wax, 16½ poods	1,452
Shut-yellow, 490 poods	4,139
Silken goods; raw and dyed, 1953 poods	493,783
—— sattins, plain, 26,720 arshines	40,440
—— taffety, plain, 11,631 arshines	10,880
	Silken

IMPORTS OF 1796.

509

	Rubles.
Silken gros-de-tours, plain, 1624 arshines	2,403
Velvets, plain, 348 arshines	2,770
— handkerchiefs, 1716	11,660
— half-filk with cotton, 157 doz.	3,000
Silver, wrought	5,635
Siphons, brafs, &c. 710 doz.	4,247
Soap, 984 poods	18,840
Spectacles	6,350
Spelter, 15,430 poods	132,555
Steel, 1553 poods	9,125
Stockings, filk, 561 doz.	28,158
— cotton and thread, 4157 doz.	53,995
— worsted and yarn, 4722 doz.	45,003
Stone ware; porcelaine	8,207
— earthen and stone	68,650
— tiles, pantiles, and bricks	11,280
— quarry, mill, whet, and grindstone	3,029
— marcasite, tripoly, pumice, emery, serpentine, &c.	11,431
— coals	68,250
Storax, 47 poods	2,345
Sugar; refined, 215,682 poods	4,107,644
— melasses, 36,515 poods	638,030
— loaf, 13,920 poods	229,660
— candy, 910 poods	22,216
— raw, 32,882 poods	383,558
Scythes, 343,608	151,003
Tartar, 2650 poods	20,703
Tea, 56 poods	5,916
Teazels	4,150
Terebinth oil, 2510 poods	14,343
— varnish, 596 poods	7,635
Tin, 13,775 poods	191,257
Tobacco; cnafter, 22 poods	1,607
— common smoking, 1640 poods	32,420
	Tobacco;

	Rubles.
Tobacco; roll and leaf, 1798 poods	17,297
—— snuff, 1265 poods	19,257
—— clay pipes	2,024
—— horn pipes	2,770
Trinkets	47,710
Utensils, glass and crystal	10,291
Verdegris, 1090 poods	60,977
Vitriol, 105 poods	907
—— oil, 1091 poods	18,515
Vinegar, 2145 hogsheads	50,996
Violet-roots, 286 poods	2,243
Wafers, 162 poods	377
Waters, mineral	14,283
—— scented	2,386
Wines; spanish, 11,679 hogsheads	815,643
—— portuguese, 5873 hogsheads	522,522
—— hungary, 405 hogsheads	105,650
—— italian, 715 do.	61,493
—— rhenish, mozel, &c. 332 do.	44,635
—— grecian, 423 do.	18,424
—— liquors, 21 do.	7,902
—— brandy, arrack, rum, and shrub, 112 do.	32,605
Wood; sandal, red, 40,747 poods	111,807
—— blue, 1241 do.	3,854
—— yellow, 1655 do.	6,863
—— dye woods, 2837 do.	23,120
—— saffrafras, cedar, &c.	57,974
—— trees, of various sorts	9,766
Woollen goods; yarn, white, spun, and dyed, 238 poods	10,871
—— camels hair, 103 do.	112,112
—— carpets and hangings	21,930
—— baize, narrow, 618,302 arshines	438,922
—— broad, 111,762 do.	128,945
—— fine, 1766 do.	4,974
Woollen	

EXPORTS IN 1798.

511

	Rubles.
Woollen goods; tammies, 213,601 poods -	91,608
----- camlets, 69,136 do. -	31,974
----- flammies, everlastings, barracans, calimancos, serges, &c. 70,445 do. -	29,111
----- flannels, 17,659 do. -	7,237
Total	<u>26,355,890</u>

Goods exported in British Ships from St. Petersburg, 1798.

Iron	-	-	-	poods	2,352,217
Hemp, clean	-	-	-	-	1,510,683
----- outshot	-	-	-	-	156,057
----- half clean	-	-	-	-	35,393
----- codilla	-	-	-	-	31,660
Flax, twelve-headed	-	-	-	-	469,526
----- nine-headed	-	-	-	-	12,645
----- six-headed	-	-	-	-	1,907
----- codilla	-	-	-	-	35,481
Isinglass	-	-	-	-	5,186
Bristles	-	-	-	-	22,918
Hides	-	-	-	-	440
Tallow	-	-	-	-	1,064,249
Potash	-	-	-	-	79,371
Cordage	-	-	-	-	32,135
Old iron	-	-	-	-	24,860
Feathers	-	-	-	-	4,490
					Linseed

512.

EXPORTS IN 1798:

Linseed	-	-	chetv.	57,116
Broad diaper	-	-	athines	257,693
Narrow diaper	-	-	-	445,978
Broad linen	-	-	-	107,852
Narrow linen	-	-	-	515,197
Crash	-	-	-	2,110,249
Drillings	-	-	pieces	17,273
Flems	-	-	-	36,071
Raventuchs	-	-	-	111,774
Sail-cloth	-	-	-	2,440
Table-cloths	-	-	-	111
Napkins	-	-	-	314
Balks	-	-	-	7,937
Scantlings	-	-	-	900
Mafts and spars	-	-	-	754
Lathwood	-	-	-	112,701
Pale boards	-	-	-	4,234
Deals	-	-	-	3,127,594
Mats	-	-	-	10,119
Hoop iron	-	-	poods	2,120
Tallow-candles	-	-	-	2,393
Linseed oil	-	-	-	466
Salt beef	-	-	-	9,678
Horse-hair	-	-	-	584
Cow-hair	-	-	-	2,473
Elk-hair	-	-	-	393
Raw filk	-	-	-	18
Rhubarb	-	-	poods	236
Wax	-	-	-	2,185
Glue	-	-	-	1,188
Copper	-	-	-	63
Rofin	-	-	-	1,914
Old rope	-	-	-	1,688
Soap	-	-	-	14
Down	-	-	-	15
Castoreum	-	-	-	27
				Wheat

EXPORTS IN 1798.				513
Wheat	-	-	chetverts	472
Printed linens	-	-	arshines	360
Ticking	-	-	pieces	19
Horse tails	-	-	-	286
Deer horns	-	-	-	500
Oxen horns	-	-	-	1000
Russia leather	-	-	-	78
Calf skins	-	-	-	700
Hare skins	-	-	-	59,156
Bear skins	-	-	-	693
Squirrel skins	-	-	-	146
Marten skins	-	-	-	37
Sable skins	-	-	-	26
Ermine skins	-	-	-	50
Deer skins	-	-	-	135
Cat skins	-	-	-	144
Fox skins	-	-	-	235
Fox tails	-	-	-	10,770
Tongues	-	-	-	13,000

Merchant-Ships arrived and sailed 1797.

		Arrived	Sailed	WINTER 1796	
				at Cronstadt	at St. Peterf. b.
Russian		56	56	13	8
British		440	432	8	1
American		26	26	—	—
Of Bremen		11	11	—	—
Of Dantzic		8	8	1	—
Of Hamburg		3	4	—	—
Danish		104	94	7	3
Courlanders		1	1	—	—
Of Lubek		43	36	8	—
Of Oldenburg		9	8	—	—
Prussian		44	38	—	—
Of Papenburg		5	5	—	—
Portugueze		7	3	4	—
Of Rostock		54	53	1	—
Swedish		76	65	9	2
Hollander, of the year 1796 . . .		—	—	1	—
In all		887	840	52	10
Ships arrived in 1796 . . . 1,147					
failed 1,169					
Therefore this year are fewer . 259			329		
Of these ships were full					
freighted 259					
not full 208					
in ballast 422					
Burden of these ships in lafts					
of the arrived . . . 76,584½					
failed 77,345½					
Remained to winter from 1796 . .		8			
New built		6			
Brought to Cronstadt by the ice .		1			
In all		902			

Expences

Expences on Goods for Exportation and Importation at St. Petersburg, according to the new Regulation of 1798.

EXPENCES ON MERCHANDISES OF EXPORTATION.

			Common receipt.		Purchase in winter, more.	
			R.	K.	R.	K.
Wax candles, per box	-	-	0	40	0	10
— with package	-	-	0	60	0	0
Calimanco, per piece	-	-	0	8	0	3
Castoreum, per pood	-	-	1	80	0	70
Kaviar, per barrel	-	-	1	50	0	80
Tallow candles, per box	-	-	0	20	0	10
— with package	-	-	0	40	0	0
Hemp, first sort, per bundle	-	-	1	25	0	75
— for the bands	-	-	0	30	0	0
— second sort	-	-	1	0	0	60
— for the bands	-	-	0	20	0	0
— third sort	-	-	1	0	0	60
— for the bands	-	-	0	15	0	0
— codilla	-	-	0	0	0	0
— with the bands	-	-	0	60	0	40
Wax, per pood	-	-	0	25	0	10
Isinglass	-	-	0	50	0	20
Horse-hair, per bale	-	-	2	0	0	70
Yufts, or ruffian leather, per bundle	-	-	0	25	0	5
Sole and pump leather, per 20 pieces	-	-	2	0	0	60
Bar iron, per berkovetch	-	-	0	10	0	5
— sorted and hoop	-	-	0	15	0	5
Wheat, per chetvert	-	-	0	15	0	3
Hempseed and linseed	-	-	0	10	0	3
Hempseed oil and linseed oil, per barrel	-	-	1	50	1	0
L L 2			Hops			

	Common receipt.		Purchase in winter, more.	
	R.	K.	R.	K.
Hops (sacks apart) - - -	0	10	0	5
Seal blubber - - -	1	50	1	0
Flax, 1st, 2d, and 3d sort, without the expence of package, by bundle -	0	10	0	5
— for the bands, by berkovetch -	0	8	0	0
— in bundles, with package, by bundle - - -	1	20	0	60
— for the bands, by berkovetch -	0	10	0	0
— codilla, including the expence of the bands, by bundle - - -	0	80	0	40
(For the package apart.)				
Mats, by the thousand - - -	2	0	1	20
Goat-skins, per hundred - - -	0	50	0	25
Elk-skins in bundles of 20, per bundle	2	0	0	80
Squirrels skins, per thousand -	1	50	0	40
Hare-skins, 1050, per bundle -	3	50	1	0
Ditto, with package in barrels, per barrel - - -	4	50	1	0
Potash (package apart) - - -	1	50	0	80
Raventuchs, per piece - - -	0	10	0	3
Rosin and coliphonium, per berkovetch	0	80	0	40
Rhubarb, per pood - - -	1	0	0	50
Saltpetre - - -	0	10	0	5
Soap in boxes (boxes apart) - -	0	10	0	3
Barley, per chetvert - - -	0	10	0	3
Bristles, per pood - - -	0	15	0	5
Tallow, per cask - - -	1	0	0	50
— per half-cask - - -	0	60	0	40
Tobacco in casks (and for pressing apart) per pood - - -	0	5	0	2
Tea, per pood - - -	1	0	0	25
Linens, white, of various sorts, per thousand arshines - - -	1	50	0	50
Sail-cloth in small parcels, per piece	0	15	0	5
Sail-cloth				

BRACKAGES, &C. ON GOODS. 517

	Common receipt.		Purchase in winter, more.	
	R.	K.	R.	K.
Sail-cloth in bales of 20 rouleaux, per roul.	-	-	0	25
— flens, per piece	-	-	0	10
Potash, per cask	-	-	1	50
All sorts of wood amounting to 10 per cent. and the transport to Cronstadt apart.				

Lift of Brackages on Articles of Merchandise for Exportation.

	R.	K.
Corn, per chetvert.		
Kaviar, per barrel	-	1 0
Hemp, and heads of hemp, per berkovetch	-	0 12
Isinglass, per pood	-	0 25
Horse hair and tails	-	0 5
Red leather or yufts	-	0 4
Hempseed and linseed, per chetvert.		
— oil, per pood	-	0 1½
Seal blubber	-	0 1½
Flax, and heads of flax, per berkovetch	-	0 25
Hare-skins, per thousand	-	2 0
Potash, per cask	-	0 50
Rhubarb, per pood	-	4 0
Bristles	-	0 5
Tallow, per cask	-	0 7
Tobacco in leaves, per pood	-	0 2

518. EXPENCES ON IMPORTATION.

EXPENCES ON MERCHANDISES OF IMPORTATION.

			Sale on un- loading.		Sale retarded more.	
			R.	K.	R.	K.
Steel, per cask	-	-	0	40	0	10
Alum, per berkovetch	-	-	1	0	0	40
Almonds, per pood	-	-	0	15	0	5
Woods, sandal, red, blue, yellow, per berkovetch	-	-	0	75	0	45
Corks, by the thousand	-	-	0	15	0	5
Coffee, per pood	-	-	0	20	0	10
Camphir	-	-	0	60	0	20
Cinnamon, cardamums, nutmegs, &c.			1	50	0	75
Shalloons, camlets, calimancos, &c. per piece	-	-	0	8	0	5
Oranges and lemons, per box	-	-	0	20	0	10
Lemons salted, per barrel	-	-	1	0	0	70
Lemon juice, per cask (cellarage apart)			0	20	0	5
Orange and lemon peel, per pood	-	-	0	10	0	5
Cochenille, per pood	-	-	1	0	0	50
Dyes; madder, safflower, and other common colours, per pood	-	-	0	15	0	20
Cloths, fine, per piece	-	-	0	30	0	20
———— half cloths and kersemere	-	-	0	20	0	10
———— ordinary filefian, &c.	-	-	0	20	0	10
———— (for bracking 25 kop. apart)						
Pewter, in pigs	-	-	0	15	0	5
Scythes, per hundred	-	-	0	30	0	10
Flannels and frizes, per piece	-	-	0	25	0	15
Cheese, per pood	-	-	0	15	0	10
Ginger	-	-	0	15	0	10
Cloves	-	-	1	0	0	50
Herrings, dutch, in barrels, $\frac{1}{2}$ and $\frac{1}{4}$ per barrel	-	-	0	50	0	25
———— in $\frac{1}{2}$ and $\frac{1}{4}$ barrels, per barrel			0	10	0	5
———— of Sweden and Norway, per barrel	-	-	0	40	0	10
						Herrings,

EXPENCES ON IMPORTATION.

519

	Sale on un- loading.		Sale retarded more.	
	R.	K.	R.	K.
Herrings, (for bracking, per ton 20 per cent. apart for ditto in $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, and $\frac{1}{16}$ barrels, per barrel 10 kop. apart.)				
Oil of olives, in barrels, per pood	0	10	0	5
(besides cellarage and cooperage)				
— in flask, per case	0	75	0	25
— of turpentine, &c. per pood	0	15	0	10
Oysters, per barrel	1	50	0	0
Indigo, per pood	0	50	0	30
Nut galls	0	15	0	6
Pearl barley	0	10	0	5
Paper, large size, per ream	0	20	0	10
— small	0	8	0	2
— in cards, &c.	0	10	0	5
Beaver and otter-skins, per 10 pieces	0	80	0	40
Tobacco pipes, per gross	0	10	0	5
Lead, per berkovetch	0	60	0	15
Pepper and pimento, per pood	0	15	0	5
Prunes in casks, per pood	0	10	0	5
— in boxes, per box	0	20	0	10
Raisins and figs in small casks, per pood	0	15	0	10
— in large casks, per pood	0	10	0	5
— in boxes	0	25	0	10
Rice	0	10	0	5
Saffron	2	0	1	0
Spelter or tutenague	0	15	0	10
Silk, raw	1	50	0	50
Sulphur and saltpetre, (without ex- pence of keeping, per berkovetch)	0	70	0	30
Sugar of all sorts, per pood	0	15	0	10
— raw, in casks	0	10	0	5
— in boxes	0	20	0	5
— candy	0	35	0	10

L L 4

Tobacco

			Sale on un- loading.		Sale retarded more.	
			R.	K.	R.	K.
Tobacco in rolls	-	-	0	15	0	5
———— smoking	-	-	0	25	0	15
Tartar	-	-	0	7	0	3
Tea	-	-	1	0	0	23
Printed cottons and perfians, per piece			0	15	0	10
Verdegris and sal ammoniac, per pood			0	20	0	10
Quicksilver, vermillion, orlean, farfa- parilla, &c.	-	-	0	30	0	10
Wines and spirits, per cask	-	-	1	75	1	0
———— per bottle	-	-	3	0	1	50
———— fine, in bottles, per bottle	-	-	0	3	0	2
———— ordinary	-	-	0	2	0	1
———— in small barrels, per barrel	-	-	1	0	0	50
(Cellarage of these liquors apart.)						
Vinegar — ditto, per cask	-	-	1	0	0	70
Glass of Bohemia, per case	-	-	0	75	0	40
— of Mecklenberg and Pomerania	-	-	0	40	0	20

Commissions for the Dispatch of Merchant Ships.

	Rubles.
For a vessel of 25 lasts and under	20
25 to 50 lasts	30
50 to 75	40
75 to 100	50
100 to 150	75
upwards of 150 lasts	100
For packing the freight, 3 per cent.	
looking after the loading, 2 per cent.	
passports from the custom-house and the admi- ralty	15
	Church

COMMISSIONS, &c.

521

Rubles.

Church dues for each vessel, 5 rubles here, and 2 rubles at Cronstadt - - -

7

River charges, or ordinary anchorage, for all ships according to the freight, (except in specie) 5 per cent.

(However, when the bill of lading mentions an equivalent for the ordinary anchorage, these 5 per cents. are not paid.)

Commissions, Brokerages, &c.

Pr. cent.

Commission on all merchandizes imported and exported - - -

2

extraordinary charges for ditto -

1

on precious stones - -

5

for rix dollars, ducats, and other species -

1

for casing, paying, or remitting monies -

1

for affairs of exchange - -

$\frac{1}{2}$

and extraordinary charges for the delivery of goods - - -

2

for the administration of a failure -

3

for the pursuit and recovery of doubtful debts

5

Brokerage for the purchase and sale of all merchandizes - - -

$\frac{1}{2}$

for exchange of all kinds of money, and for

letters of exchange - -

$\frac{1}{4}$

on loading and unloading, per last, 25 kopecks

Custom-house charges according to the amount of the duties - - -

4

Stamp duties, per thousand rubles, 2 rubles.

Balance

*Balance of the Imperial Loan-Bank for the
Year 1794.*

	DEBIT.	R.	K.
To the original capital of the bank, anno			
1754 - - -	-	404,560	36
the former bank of Mosco -	-	1,403,412	10½
assignments-bank -	-	26,447,686	87¾
by supreme command, paid in by the late general-procureur prince Va-			
semkoy -	-	478,011	35¾
by the late high-steward Yelagin -	-	9,820	66½
the legacy of prince Kantimir -	-	102,834	2¼
from the security-bank -	-	21,382	77
from the revenues of the estates Bo-			
goroditza and Bobrikovitch -	-	103,425	64
the fund for the erection of univer-			
sities and schbols -	-	858,587	61½
the capital of the St. George's order	-	527,358	29¾
the college of commerce -	-	5,509	56½
the artillery cadet-corps -	-	34,774	74¾
the academy of sciences -	-	30,367	50
the court-stable kantora -	-	121,852	1¾
the school direction -	-	122,856	2
the general post direction -	-	441,247	72½
the magistracy of St. Petersburg -	-	8,126	43½
the college of general concern of do.	-	90,625	79¾
the provision magazine of do. -	-	404,532	28½
the finance-chamber of Mosco -	-	45,720	22¼
of St. Petersburg. -	-	2,072	46½
the printing-office of the synod -	-	31,230	
the monastery of St. Sergius -	-	2,563	75
St. Cyril -	-	4,006	50
			To

IMPERIAL LOAN-BANK

523

	R.	K.
To fundry private persons	- 4,987,249	11½
the imperial finance-office, St. Peterf-		
burg	- 4,955	48½
several, for sums sent in without proper		
explanation	- 7,188	71½
interest for taxes paid before due	- 42	50
the assurance office	- 56,148	73½
the capital of the bank	- 1,782,319	10½
Total	<u>38,540,468</u>	<u>39½</u>

CONSISTING IN

	R.	K.
Gold and silver	- 1,273,507	60
Assignats and copper	37,266,960	79

CONTRA.

CREDIT.

	R.	K.
By various debtors for 8 years	- 11,081,140	8½
20	- 17,333,369	50½
22	- 7,841,538	70½
the bank of Ekatarinoslaf	- 1,213,016	19½
in caisse	- 1,071,403	90½
Total	<u>38,540,468</u>	<u>39½</u>

Amount

*Amount of the Goods imported and exported by
the following Merchants, at St. Petersburg,
1797, valued in Rubles.*

		Imported.	Exported.
AMBURGER, Fried. Wilh.	-	242,781	661,719
Amburger and son	-	206,595	513,531
Anderson, Brown, and Moberley	-	368,981	564,427
Andry, Michael	-	11,440	—
Arhusen, Adolphus	-	122,817	146,806
Auld, Robert	-	4,053	77,100
Bacheracht, Gabriel	-	323,880	159,243
Balemann, Bernh. Heinr.	-	8,482	1,104
Barnes, John Samuel	-	—	226,188
Barwick, William	-	157,890	219,011
Bayley, Daniel	-	—	737,921
Becker, Caspar	-	6,895	209
Belenkien, Ossip	-	229,863	—
Bellermann, Joh. Christ.	-	42,878	21,392
Bergien, Joh. Christ.	-	76,125	3,956
Bernhardt, Joh. Ludwig	-	6,410	—
Birch, George	-	52,921	447,584
Blandow, Joh. Jakob	-	315,065	1,137,981
Bock, Hermann	-	346,816	62,464
Böhtlingk, Heinr. Wilh.	-	1,270,605	1,346,918
Boissonet, Jean Bapt.	-	5,095	25
Bolien, Johann	-	5,662	4,065
Bond and Littledale	-	7,770	134,175
Borel, Joseph	-	17,824	—
Borissof, Ivan	-	17,489	—
Brandstetter, Franz.	-	156,321	28,441
Bremer, J.	-	93,417	103,623
Bruckner, J. G.	-	25,429	36,115
			Bruhn,

IMPORTS AND EXPORTS IN 1797. 525

		Imported.	Exported.
Bruhn, Hans Heinrich	-	30,177	147,769
Bulkeley, John M.	-	37,116	501,495
Busk, Brothers	-	140,789	357,180
Carr and company	-	7,283	952,977
Carstens, Johann.	-	337,378	15,022
Cattleys, Prescott, and company	-	73,214	1,628,193
Cavanaugh and company	-	142,249	59,951
Chambers, Anthony	-	7,960	4,000
Clarkson, Thomas	-	6,378	—
Cloftermann, Hermann	-	19,170	—
Colombi, Antoine	-	41,251	66,326
Cörner, Christ. Aug.	-	36,848	65,778
Cox and company	-	59,938	209,470
Cramer, Bened.	-	15,260	376
Culot, Pascal	-	27,822	—
Dahler, Christian	-	187,752	12,551
Danckel, James	-	—	19,100
Danckwerz, Gabr. Ludwig	-	53,995	134,953
Dafer, Johann.	-	37,586	1,680
Defkien, Alexey	-	—	11,053
Deforge, Barth.	-	13,446	3,207
Dobolien, Ivan	-	323	17,284
Dolgof, Afanasi	-	42,501	74,060
Drury, Anthony	-	30,813	200
Duval, Louis David	-	33,316	—
Eisermann, Joh. Matth.	-	47,160	17,817
Eyffel van, Hendrick	-	380,801	100,398
Felbinger, Joh. Heinr.	-	7,462	700
Fiers, Salomon	-	42,302	14,500
Filippof, Ivan	-	95,763	96,652
Flury, Friedrich	-	15,633	3,755
Forrester, Robert	-	33,381	53,307
Forsyth, David	-	24,726	126,513
Franz, Joh. Friedr.	-	13,325	—
Gardner, Francis	-	—	65,890
Giers, Carl Ferd.	-	65,887	329,706
			Gilmore

526 IMPORTS AND EXPORTS IN 1797.

		Imported.	Exported.
Gilmore and company	-	1,840	72,915
Gilmore, Peter	-	9,888	37,990
Glen and company	-	60,501	537,346
Gluchof, Martin	-	42,100	9,835
Gautof, Vassily	-	9,750	—
Grooten, Joh. Philip	-	172,890	81,740
Gubien, Mikhaila	-	6,858	2,400
Gulich, Peter	-	128,727	74,865
Günther, Joh. Vinc.	-	8,226	1,125
Hawkesford, Samuel	-	6,077	1,360
Häfeler, Joh. Nicol.	-	217,993	222,600
Hambeck, F.	-	91,766	90,619
Hamilton, Archibald	-	55,588	68,064
Hasse, Joh. Heinr.	-	23,717	16,109
Hekker, Dirk	-	30,417	87,752
Henly, Samuel	-	92,717	—
Hett, Sebastian	-	19,711	7,585
Heyn, Albert	-	101,045	26,821
Higginbotham, John	-	—	138,250
Höppner, Thom. Fried.	-	39,597	490
Holliday, John	-	8,332	—
Hott, Joachim	-	—	70,154
Hoy and Bellis	-	182,164	85,200
Hulsenbeck, Joh. Fried.	-	31,243	174,061
Jagodnikof's sons	-	14,500	—
Janschien's sons	-	51,331	—
Jencquel, Daniel	-	19,918	118,148
Illien, Feodor	-	17,225	—
Jones and company	-	166,947	609,662
Iroschnikof, Vassily	-	187,792	—
Ivanof, Andrey	-	23,964	—
Kalustof, Martin	-	48,800	—
Kanzler, J. H.	-	20,307	3,324
Karassof, Vassily	-	69,662	—
Karpof, Feodor	-	4,750	1,785
Kiepper, George	-	15,425	62,518
			Kiereikof,

IMPORTS AND EXPORTS IN 1797. 527

		Imported.	Exported.
37	Kienzikof, Gregory	131,185	20,000
37	Knieper, Peter	94,457	89,818
37	Knutson, Detlef	155	13,124
37	Koschennikof, Peter	45,112	—
9,83	Krestovnikof, Kusmin	16,422	—
—	Kroscher, William	19,829	—
31,74	Kruschevnikof, Alexey	49,008	—
240	Kumanin, Alexey	20,766	—
—	Kummell and Bleffig	269,900	451,907
11	Kuszof, Ivan	303,141	71,865
—	Lacoste, Jean	1,079	6,295
—	Lange, brothers	13,619	—
—	Laptief, Ivan	151,922	—
—	Levanus, Peter	1,992	11,578
—	Little, James	525	25,417
—	Livio, brothers	233,559	100
—	Mahs, Joachim	67,837	674,660
—	Mackintosh, John	13,600	—
—	Mareschal, Philip	—	6,094
—	Marsch, Johann Ernst	26,601	43,000
—	Marsch, George	7,703	—
—	Meder, Christian	228,706	180,827
—	Meesse, Heinrich	110,384	—
—	Meibohm and company	250,291	137,258
—	Mercer, Thomas	3,153	7,933
—	Mitropolof, Gavril	21,851	—
—	Molwe, Jacob	698,905	49,260
—	Müller, Caspar	11,324	—
—	Müller and Ritter	197,282	93,267
—	Musehl, Friedr. Albr.	59,547	3,910
—	Newel, Robert	111,910	18,450
—	Paris, Warre, Harvey, and comp.	1,117,298	3,013,961
—	Paskof, Ivan	5,250	—
—	Pickersgill and company	16,135	—
—	Pipping, Jos. Henry	95,671	88
—	Pittschalnikof, Peter	256,841	—
4			Porter,

528 IMPORTS AND EXPORTS IN 1797.

		Imported.	Exported.
Porter, Browne, Wilson, and comp.		100,374	424,877
Poschegonof, Gregory	-	44,084	—
Preyfler, Gabriel	-	26,124	—
Raikes, Timothy	-	99,283	382,553
Raimbert and company	-	19,451	250
Rall, Alexander	-	75,759	143,270
Richter, Joh. Friedr.	-	50,976	746,095
Ritches, William	-	5,018	—
Rogers and company	-	261,078	234,807
Saizof, Feodor	-	416,157	6,278
Samareyef, Borice	-	75,624	4,616
Schadimirof, Alexey	-	122,644	154
Schapkin, Andrey	-	—	29,130
Scharapof, Gregory	-	3,237	25,120
Schevaldischef, Foma	-	12,868	—
Schiele, Joh. Bernh.	-	2,311	12,021
Scholai, Jean	-	35,729	19,941
Schröder, Andr. Jacob	-	59,010	52,479
Schumacher, Herrmann	-	315,512	711,390
Schvefnikof, Jacob	-	30,604	20
Scougal, George	-	66,951	212,143
Sera and Ribba	-	119,667	249,483
Severin, Heinr. Gottfr.	•	740,846	163,786
Shairps and company	-	218,011	748,436
Sievers, Thomas	-	21,683	472
Sikaar, Peter Isaac	•	66,198	200
Simonsen, Asmus	-	32,354	55,675
Siricius, George Magnus	-	48,163	67,791
Sittnikof, Simeon and Feodor	-	369,006	—
Slinin, Yephim	-	35,572	4,305
Smith, Edw. James, and company		119,462	597,328
Smith, Thomas	-	10,452	—
Speder, Christopher	-	17,149	26,686
Steffens, J. C. M.	-	12,910	3,622
Stuht, Joh. Heinr.	-	34,381	7,202
Sanduschnikof, Alexey	-	41,739	—
			Suvarof,

IMPORTS AND EXPORTS IN 1797. 529

	Imported.	Exported.
Suvorof, Alexey - -	-----	65,700
Swan, Thomas - -	8,243	-----
Tald, Christ. David -	92,179	19,266
Thieringk, Anth. Fried. -	116,524	194,962
Thomson, Peters, Bonar, & comp. -	705,981	3,152,528
Thornton and Cayley -	59,476	1,016,783
Thorntons, Smalley, Bayley, & comp. -	13,015	1,668,586
Tschigaref, Vassily - -	15,600	-----
Turtscheninof, Vladimir -	46,963	-----
Turuth, Andrey - -	34,110	3,137
Ulich, Friedrich - -	13,660	-----
Uftiyef, Yegor - -	45,750	-----
Velho, J. P. C. - -	255,735	205,224
Venning, William and George -	1,932	419,715
Vernon, Thomas - -	9,900	115,130
Viazzoli and company -	226,324	292,840
Vliet van der, Pieter - -	103,806	36,338
Wagnon, Henry Samuel -	38,213	-----
Weber, Leonard - -	47,067	29,061
Wendt, Levis - -	104,204	31,341
Werthmann, Mich. Fried. -	261,532	105,683
Westley, John - -	9,566	42,957
Whitaker, James - -	89,829	9,950
Whishaw and Henley -	157,440	154,086
Wilkins, Caleb - -	-----	9,191
Wittneben, Johann - -	64,724	111,611
Wolff, Friedrich - -	134,684	187,939
Wulffert, Carl - -	29,758	-----
Wurn, Joh. Gustav. - -	1,115	11,388
	19,265,284	32,090,901
By several merchants, strangers, and travellers - -	100,775	360,010
Total rubles	19,366,059	32,450,911

Goods exported in British Ships from St. Petersburg, in the year 1799.

Iron	- - -	poods	1,591,775
Hemp, clean	- - -	-	1,276,114
— outshot	- - -	-	355,795
— half clean	- - -	-	162,721
— codilla	- - -	-	52,552
Flax, twelve-headed	- - -	-	341,927
— nine-headed	- - -	-	83,017
— six-headed	- - -	-	2,073
— codilla	- - -	-	17,879
Isinglass	- - -	-	4,950
Bristles	- - -	-	27,873
Hides	- - -	-	977
Tallow	- - -	-	1,385,704
Tallow-candles	- - -	-	3,708
Potash	- - -	-	82,574
Horse-hair	- - -	-	1,469
Cow-hair	- - -	-	1,298
Feathers	- - -	-	4,225
Old iron	- - -	-	17,590
Broad-diaper	- - -	arshines	280,437
Narrow diaper	- - -	-	309,372
Broad linen	- - -	-	133,416
Narrow linen	- - -	-	499,801
Crash	- - -	-	1,592,453
Drillings	- - -	pieces	7,424
Flens	- - -	-	61,589
Raventuchs	- - -	-	126,159
Sail-cloth	- - -	-	3,654
Mats	- - -	-	14,890
Tongues	- - -	-	16,444
Deals	- - -	-	321,562
Lathwood	- - -	-	15,520
Linseed	- - -	chetv.	43,371
Wheat	- - -	-	4,055
			Hoop

EXPORTS IN 1799.

531

Hoop iron	-	-	poods	409
Cast iron	-	-	-	1,231
Wax	-	-	-	1,943
Wax-candles	-	-	-	5
Cordage	-	-	-	40,811
Glue	-	-	-	875
Elk-hair	-	-	-	261
Sole leather	-	-	-	80
Hemp oil	-	-	-	52
Linseed oil	-	-	-	1,321
Soap	-	-	-	1,577
Old rope	-	-	-	469
Oakum	-	-	-	315
Caviar	-	-	-	96
Cotton	-	-	-	699
Deer horns	-	-	-	500
Reindeer horns	-	-	-	69
Salt beef	-	-	-	2,793
Iron nails	-	-	-	210
Rhubarb	-	-	-	86½
Castoreum	-	-	-	20
Printed linens	-	-	arshines	500
Ticking	-	-	pieces	12
Table-cloths	-	-	-	41
Napkins	-	-	-	18
Wooden hoops	-	-	-	1,875
Oxen horns	-	-	-	5,000
Horse tails	-	-	-	3,650
Morocco leather	-	-	-	7
Calf skins	-	-	-	77
Hare skins	-	-	-	1,310,700
Bear skins	-	-	pieces	1,608
Fox skins	-	-	-	131
Squirrel skins	-	-	-	50
Sable skins	-	-	-	3
Marten skins	-	-	-	36
Ermine skins	-	-	-	48
Cat skins	-	-	-	72

Number of Ships arrived in 1799.

456 british
62 american
253 other nations
<hr/>
771 ships.
<hr/>

Value in rubles of Goods exported and imported by merchants and other persons of different nations at St. Petersburg and Cronstadt in 1799.

THE SEVERAL NATIONS.				VALUE OF THE MERCHANDISES.	
				Imported. Rubles.	Exported. Rubles.
Russian	-	-	-	11,322,123	8,254,643
English	-	-	-	7,344,130	29,229,057
Austrian	-	-	-	68,488	30,580
Danish	-	-	-	122,357	272,916
Mecklenburg	-	-	-	1,115	2,040
Portuguese	-	-	-	93,891	175,932
Italian	-	-	-	800	50
Swedish	-	-	-	2,171	
Other nations and passengers				204,455	7,519
Masters of ships			-	131,249	197,188
Total				19,290,779	38,169,925
The exports exceed the im- ports by				18,879,146	
In 1798 the amount was				25,936,020	36,552,476
Therefore, this year 1799 the exports are more by				-	1,617,449
And the importation is in this year less by				6,645,241	

Amount

Amount of all the Duties and Imposts received at the Custom-house in 1799.

Duties in dollars, 2521 poods, 37	} which make in rubles {	2,043,981
pounds, 52 solotniks -		
in ducats, 5 poods, 14 pounds, 36 solotniks -		
in money of the country -		1,610,745

Other Duties, viz.

from the towns -	57,236
of different denominations -	972,222
Total	4,684,184
In 1798 the amount was -	4,219,325
Therefore, this year, 1799, there is an increase of	464,859

Gold and Silver imported.

	pood	lb.	solotn.	rubles
Gold in ducats 15,698 making 3	10	82		66,825
Silver in bars 40 -	40	31	—	44,700
in 542,503 Albert dollars 921	38	28		1,128,820
in different species, 84 -	—	1	—	30
Total				1,240,375
In 1798 the amount was -	-	-	-	894,156
Therefore, in 1799 the surplus was -	-	-	-	346,219

Ships cleared inncards and outcards 1799.

		WISTED			
		Arrived	Sailed	at Cronstadt	at St. Petersburg.
Russian	. . . . .	17	20	—	1
English	. . . . .	456	455	2	—
Lubeckers	. . . . .	63	63	—	6
Danes	. . . . .	37	37	1	—
Prussian	. . . . .	34	32	1	1
Rostockers	. . . . .	36	35	1	—
Portuguese	. . . . .	2	—	2	—
American	. . . . .	62	62	—	—
Dantzickers	. . . . .	7	5	2	—
Swedes	. . . . .	56	51	2	3
Of Bremen	. . . . .	2	2	—	—
Of Oldenburg	. . . . .	3	4	—	—
Of Papenburg	. . . . .	4	4	—	—
Spaniards, of 1796	. . . . .	—	—	1	—
In all		779	770	12	11
Ships arrived and failed in 1798 . .		1052	1104	3	9
Thus this year, 1799, there have been fewer		273	334	—	—
Of these ships had their full cargoes					
	not full				
	in ballast				
Burden of these ships in lasts					
	of the arrived				
	of the failed out				

Value

*Value of the Ruble by the Course of Exchange
at St. Petersburg, 1799.*

	DUTCH STUYVERS.			PENCE STERLING.			HAMBURGH SCHILLINGS.			VIENNA KREUTZERS.		
	Highest	Mean	Lowest	Highest	Mean	Lowest	Highest	Mean	Lowest	Highest	Mean	Lowest
January	27 $\frac{7}{8}$	27 $\frac{1}{2}$	27 $\frac{1}{4}$	26 $\frac{1}{4}$	25 $\frac{3}{4}$	25 $\frac{1}{4}$	23 $\frac{7}{8}$	23 $\frac{1}{2}$	23 $\frac{1}{4}$	—	—	—
February	27 $\frac{1}{2}$	27	26 $\frac{1}{2}$	25 $\frac{1}{2}$	25	24 $\frac{1}{2}$	23 $\frac{1}{2}$	23	22 $\frac{1}{2}$	—	—	—
March	26 $\frac{1}{2}$	25 $\frac{1}{2}$	24 $\frac{3}{8}$	24 $\frac{3}{4}$	23 $\frac{7}{8}$	23	22 $\frac{3}{4}$	21 $\frac{7}{8}$	21	65	—	65
April	25 $\frac{3}{4}$	24 $\frac{3}{4}$	23 $\frac{3}{4}$	25 $\frac{1}{8}$	24	22 $\frac{3}{4}$	22 $\frac{5}{8}$	21 $\frac{1}{4}$	20 $\frac{3}{4}$	68	67 $\frac{1}{2}$	67
May	25 $\frac{3}{4}$	25 $\frac{1}{8}$	25	26	25 $\frac{1}{8}$	24 $\frac{1}{2}$	21 $\frac{7}{8}$	21 $\frac{1}{2}$	21	67	66	65
June	26	25 $\frac{3}{4}$	25 $\frac{1}{2}$	26 $\frac{1}{2}$	26 $\frac{1}{8}$	25 $\frac{3}{4}$	22 $\frac{1}{2}$	22 $\frac{1}{4}$	21 $\frac{7}{8}$	66	65 $\frac{1}{2}$	65
July	26 $\frac{1}{2}$	25 $\frac{1}{8}$	25 $\frac{1}{4}$	27	26 $\frac{1}{8}$	25 $\frac{3}{4}$	23	22 $\frac{5}{8}$	22 $\frac{1}{4}$	69	68 $\frac{1}{2}$	68
August	26	25 $\frac{3}{4}$	25 $\frac{1}{2}$	27 $\frac{1}{2}$	26 $\frac{1}{4}$	26	23	22 $\frac{1}{8}$	22	68	67	66
September	25 $\frac{5}{8}$	25	24 $\frac{1}{4}$	30 $\frac{1}{2}$	28 $\frac{3}{4}$	27	22 $\frac{1}{4}$	21 $\frac{7}{8}$	21 $\frac{1}{2}$	68	67 $\frac{3}{4}$	67 $\frac{1}{2}$
October	25 $\frac{3}{4}$	25 $\frac{1}{4}$	24 $\frac{3}{4}$	32	31	30	22	21 $\frac{1}{8}$	20 $\frac{1}{4}$	68	—	—
November	24	23 $\frac{1}{2}$	23	30 $\frac{3}{4}$	28 $\frac{7}{8}$	27	21	20 $\frac{1}{2}$	20	—	—	—
December	23 $\frac{3}{4}$	22 $\frac{7}{8}$	22	28 $\frac{3}{4}$	28 $\frac{1}{4}$	27 $\frac{3}{4}$	20 $\frac{3}{4}$	20 $\frac{1}{8}$	20	—	—	—

*Amount of the Goods imported and exported by
the following Merchants, at St. Petersburg,
1799, valued in Rubles.*

	Imported.	Exported.
AGARS, Edmund	63,204	172,002
Alexander, Francis	13,660	—
Alexeyef, Simeon	9,432	—
Amburger, Fried. Wilh.	195,222	621,281
Amburger and son	232,851	253,960
Anderson, Brown, and Moberley	479,996	1,280,541
Annot, Joseph	6,130	—
Arhusen and sons	331,180	116,197
Auld, Robert	—	133,084
Bacheracht and sons	216,536	40,988
Bagge and van Eyffel	208,434	222,581
Barnes, John Samuel	186,590	288,340
Barwick, William	500,312	286,341
Bayley, Daniel	—	709,790
Bazancourt, Morzfeld, and com- pany	14,379	80,933
Belenkien, Ossip	209,627	—
Bellermann, Joh. Christ.	44,753	5,988
Bergien and company	10,654	25,761
Berd, Charles	7,093	—
Birch, George	480	451,590
Blandow, brothers	462,318	1,626,115
Bluhmer, Caspar	17,500	—
Bocks, widow, and son	165,370	27,509
Böchtlingk and company	1,126,802	341,817
Boissonet, Jean Bapt.	15,707	—
Bond and Littledale	61,892	448,691
Borel, Joseph	9,142	—
	Brandtstädter,	

IMPORTS AND EXPORTS IN 1799. 537

		Imported.	Exported.
Brandtstædter, Francis	-	95,447	11,626
Brown, John	-	9,410	—
Bulkeley, John M.	-	80,230	423,436
Busk, brothers	-	167,373	1,092,177
Canzler, Justus Herm.	-	62,369	31,317
Carr and company	-	18,835	417,379
Carstens, Johannes	-	284,054	24,774
Cazalet and company	-	14,542	32,607
Cattleys, Prescott, and company	-	295,411	2,301,371
Cavanaugh and company	-	1,935	—
Colombi, Francis	-	10,460	8,683
Cörner, Christ. Aug.	-	24,136	16,301
Cox and company	-	287,975	86,775
Dahler, Christian	-	307,088	76,544
Danckwerz, Gabr. Ludwig	-	21,250	34,130
Dannenberg, Carl	-	18,110	2,904
Dafer, Johann.	-	53,339	—
Demourtier, Pierre	-	3,050	—
Defkien, Alexey	-	—	23,676
Dickinson, Francis	-	12,383	—
Dobolin, Johann.	-	2,000	—
Edemann, Carl	-	38,373	—
Eisermann, Joh. Matth.	-	49,391	11,804
Feverier, Henri	-	6,368	—
Fiers, Salomon	-	37,468	5,600
Filippof, Ivan	-	81,351	9,436
Forrester and company	-	30,452	254,113
Forrester, Robert	-	20,710	563,531
Gardner, Francis	-	—	122,859
Giers and Kock	-	69,605	126,710
Gilmore, Pétér	-	25,490	40,344
Gilmore and company	-	—	53,976
Glen and company	-	133,659	1,323,172
Glukhof, Martin	-	64,540	—
Golaschef, Cufma	-	2,250	—
Golindoy, George	-	88,849	9,850
			G. itsfchef,

538 IMPORTS AND EXPORTS IN 1799!

		Imported.	Exported.
Gratſchef, Yefime	-	13,800	—
Grand, A. and C.	-	75,760	332,693
Gribbanof, Matſey	-	12,637	—
Grooten, J. P. and F.	-	36,483	41,088
Gubien, Mikhaila	-	27,837	—
Günther, Joh. Vinc.	-	13,450	—
Häſeler, Joh. Nicol. and comp.	-	193,563	131,323
Hamilton, Archibald	-	8,882	182,904
Haſſe, Joh. Heinr.	-	38,410	120,765
Hawkesford, Samuel	-	4,492	24,434
Hekker, Dirk	-	29,980	34,895
Heyn, Albert.	-	17,555	17,946
Higginbotham, John	-	17,730	329,199
Hoffbauer and company	-	119,809	17,193
Höppener, Thom. Fried.	-	12,347	—
Hoy and Bellis	-	270,163	—
Hubbard and company	-	489,716	733,367
Hulſenbeck, Joh. Fried.	-	18,344	231,405
Jackson, John	-	13,404	—
Jagodnikof, Peter	-	31,700	—
Janſchiens and ſons	-	8,959	15,523
Janſen, Jan	-	27,109	—
Jedin, Mikhaila	-	14,208	38,374
Jencquel, Daniel	-	14,680	108,175
Inberts, John	-	28,701	—
Jones and company	-	85,570	1,321,884
Ireſchnikof, Vaſſily	-	73,750	—
Kaluſtof, Avdote, and Martin	-	62,790	—
Kammen, von	-	1,244	15,264
Karpof, Feodor	-	4,500	—
Kieryakof, Gregory	-	203,788	—
Knauf, André	-	11,300	2,355
Knieper, Peter	-	62,564	36,697
Knutzen, Detlef	-	2,570	47,284
Kreſtovnikof, Kuſmin	-	14,865	—
Krehmer, Joh. Andreas	-	104,180	15,911
			Koſchefnikof,

IMPORTS AND EXPORTS IN 1799. 539

		Imported.	Exported.
Koschevnikof, Peter	-	205,559	—
Krouk and Kokobus	-	1,546	—
Kumanin, Alexey	-	15,000	—
Kummell and Blettig	-	276,646	273,677
Kuftzof, Ivan	-	278,631	20,836
Laptyef, Ivan	-	190,518	—
Levanus, Peter	-	—	17,869
Livio, brothers, and company	-	289,610	100,274
Mahs, Gottlieb	-	133,143	554,022
Marfch, Johann E.	-	57,337	15,142
Marsh, George	-	47,987	—
Meese, Heinrich, and company	-	122,357	272,916
Meibohm and company	-	216,538	63,688
Mentshikof, Nicolai	-	8,517	—
Mercer, George, and Thomas	-	19,336	103,720
Minden, van, Christ. Arend.	-	19,040	391,491
Miton, Roman	-	9,478	—
Mitropolof, Alexand and Peter	-	—	32,266
Mitropolof, Gavriela	-	27,600	—
Mitropolof, Afanasy	-	12,700	—
Molwo, Jacob	-	316,465	17,028
Molwo and son	-	52,992	6,276
Motte, de la, Pierre	-	9,450	—
Müller and Ritter	-	132,631	44,042
Musehl, Friedr. Albr.	-	50,110	5,082
Noel, Robert	-	44,045	18,319
Paris, Warre, Harvey, and comp.	-	1,067,216	3,484,908
Paskof, Ivan	-	25,411	—
Pflug, Gabriel	-	—	104,597
Pym, Edward	-	—	14,809
Pittschalnikof and sons	-	213,500	—
Porter, Browne, Wilson, and comp.	-	96,887	1,137,416
Poschegonof, Gregory	-	49,745	—
Preyfler, Gabriel	-	16,963	—
Raikes, Timothy	-	79,971	463,578
Raimbert and company	-	7,400	3,228
			Rall,

540 IMPORTS AND EXPORTS IN 1799.

		Imported.	Exported.
Rall, Alexander	- -	190,231	165,004
Ribienskoy, Peter	- -	74,607	3,100
Ries, Franz.	- -	7,095	—
Ritches, William	- -	5,110	—
Saitzof, Feodor	- -	279,314	—
Sanderson, Robert	- -	5,117	—
Samareyef, Boris	- -	27,221	3,260
Schademeroof, Alexey	- -	156,983	—
Schademeroof, Jacob	- -	24,500	—
Schambers, Anton	- -	10,920	—
Scharples, Thomas	- -	127,537	103,752
Scherapof, Gregory	- -	7,000	103,752
Schiele, Joh. Bernh.	- -	7,500	18,020
Schegarof, Vaffilly	- -	103,685	—
Schipof, Ivan	- -	6,796	—
Schnackenburg, Joh. Ludv.	- -	19,582	21,979
Schoenbaum, Balth.	- -	2,171	—
Schoenberg and company	- -	464,064	144,973
Schrœder, Michael	- -	22,503	70,377
Schumacher and company	- -	333,052	437,157
Schvesnikof, Jacob	- -	13,877	3,456
Scougal, George	- -	124,924	471,299
Serfally, Sebastian	- -	3,500	—
Severin and sons	- -	483,191	122,540
Shairps and company	- -	406,715	818,809
Sievers, Thomas, and son	- -	28,783	—
Sikaar, Peter Isaac	- -	76,039	1,270
Simonsen, Asmus	- -	22,858	56,282
Siricius and sons	- -	13,446	78,301
Sittnikof, Simeon and Feodor	- -	183,069	—
Slinin, Yefime	- -	47,580	—
Smith, Edw. James, and company	- -	20,919	610,317
Stephens, J. C. M.	- -	1,040	1,546
Stuht, Joh. Heinr.	- -	14,542	—
Suvorof, Alexey	- -	—	124,949
Talanof, Prokofey	- -	—	8,909
			Tahl,

IMPORTS AND EXPORTS IN 1799. 541

	Imported.	Exported.
Tahl, Christ. David	44,122	2,409
Taylor, John	8,703	—
Thiringk, Anth. Fried.	71,009	203,935
Thom, Anton	21,169	75,502
Thomson, Bonar, and company	1,162,411	3,919,017
Thornton and Cayley	175,921	1,329,100
Thorntons, Smalley, Bailey, and company	189,781	1,633,796
Ustiof, Peter	22,625	—
Uvarof, Ivan	51,444	—
Velho, J. P. C.	93,891	175,932
Venning, William and George	21,156	236,405
Vernon, Thomas, and company	69,783	269,580
Viazzoli and company	68,488	30,589
Villeneuve de, Charles	65,865	32,165
Vliet van der, Pieter	81,990	15,435
Weber, Leonard	58,590	20,605
Wendt and Cramer,	245,722	2,770
Wehrtmann, J. M. F.	319,007	188,478
Westley, John	27,084	—
Whitaker, James	115,957	19,092
Whitford, Charles	6,750	50
Wilkins, junior	4,700	6,217
Whishaw and Henley	33,050	779,098
Wittneben, Johann.	12,465	28,307
Wolff, Friederick	5,400	—
Wolff and Schlusser	85,406	102,070
Wulffert, Carl	3,135	—
Wurm, Johann Gustav.	20,200	40,544
Zanuzzi, Anna	6,230	—
Zemsen, Filip	8,290	1,025
Rubles	19,694,151	37,663,590
By several noblemen	476,583	118,621
By several travellers, masters of ships, and private persons	2,529	387,714
Total rubles	20,173,263	38,169,925
		Prices

Prices of the several articles of provision and necessaries at St. Petersburg, January 1800.

Beef.—Fresh beef, 4 rubles the pood; frozen, 2 rubles 80 kopeeks: this article will continue nearly at the same price until late in June, when it usually falls to 2 rubles 40 kopeeks or 2 rubles 80 kopeeks.

Veal.—Now from 6 rubles to 8 rubles the pood.

Mutton.—From 4 rubles 80 kopeeks to 6 rubles.

Pork.—From 4 rubles to 4 rubles 80 kopeeks.

Ham.—Through the year 4 rubles 80 kopeeks the pood.

Tallow-candles.—At this moment high; 8 rubles to 10 rubles.

Wax-candles.—Sixty-five kopeeks the pound, or 26 rubles per pood.

Soap.—

Butter.—Colonist butter from 40 kopeeks to 60 kopeeks the pound; Finn's butter 15 kopeeks to 20 kopeeks; and Russian butter from 12 kopeeks to 15 kopeeks.

Milk.—Ten kopeeks the bottle.

Cheese.—Twenty rubles the pood english: little of any sort for sale.

Eggs.—Fresh, 80 kopeeks for 10; but others, from 15 kopeeks to 18 kopeeks.

Goose.—Seventy kopeeks, 80 kopeeks, and 90 kopeeks.

Duck.—Sixty kopeeks and 70 kopeeks.

Chickens.—Seventy kopeeks and 80 kopeeks per pair.

Fowls.—One ruble 20 kopeeks, and 1 ruble 40 kopeeks per pair: capons from 2 rubles to 3 rubles per pair,

Pigeons.—Fifty kopeeks and 60 kopeeks per pair, not in full feather.

Turkey.—From 1 ruble 20 kopeeks to 3 rubles each.

Rabbits.—One ruble 20 kopeeks, or 1 ruble 40 kopeeks per pair; very fine.

Hare.—Forty kopeeks; very large.

Wheat-meal.—Two rubles 60 kopeeks the pood; the very best.

Barley-meal.—None to be had.

Oats.

PRICES OF PROVISION AND NECESSARIES. 543

Oats.—Three rubles 80 kopecks; and 4 rubles 50 kopecks per eood; the very best.

Bread.—Seventy-five kopecks the pood, of good rye.

Oil.—The Florence flask 65 kopecks, or 15 rubles 60 kopecks the case, 24 flasks.

Vinegar.—From 1 ruble to 6 rubles the gallon.

Beer.—From a ruffian brewer 8 rubles the hoghead, from an english brewer 20 rubles the hoghead; but the former being generally very foul and muddy, few foreigners ever taste it.

Brandy.—Sixty-five rubles the anker.

Salt.—Forty-five kopecks the pood; but raised to 60 kopecks lately.

Coffee.—Forty rubles the pood.

Sugar.—Twenty-two rubles the pood.

Tea.—From 3 rubles to 7 rubles; but little of the latter here, it is more plentiful in Mosco.

Wood.—From 4 rubles to 6 rubles 50 kopecks the fathom.

Charcoal.—The rufs cool, or mat-bag, 20 kopecks, or 22 kopecks.

Snuff.—Manufactured in Russia very cheap, but foreign the contrary.

Tobacco.—From 60 kopecks to 6 rubles the pound.

Servant.—Per month 15 rubles, clothes, food.

Coachman.—Ten rubles per month, without food, but clothes provided.

Cook.—From 10 rubles to 15 rubles per month; but a foreigner 30 rubles or 40 rubles per month.

Maid-servant.—From 3 rubles to 5 rubles per month.

Keep of a saddle-horse.—Eighteen rubles per month.

Two coach horses.—To hire; from 50 rubles to 60 rubles per month, coachman included.

A governor or tutor.—Five hundred rubles or 600 rubles per annum; many french for much less.

Washing.

Washing.—Shirt 10 kopeeks; stockings, silk 15 kopeeks; cotton 5 kopeeks; cravat 4 kopeeks; waistcoat 10 kopeeks; breeches 15 kopeeks; handkerchief 3 kopeeks.

Physician.—Ten rubles.

Carriage.—To hire; One hundred rubles per month.

Lacquay.—Per day, 1 ruble; per month, 25 rubles.

Wines.—The best old port 350 rubles the pipe; table port 250 rubles; chateau marget 250 rubles the hoghead; medoc 150 rubles the hoghead; madeira 300 rubles the hoghead; champagne, the case 50 bottles, 200 rubles; Rhine wine from 1 ruble 50 kopeeks to 3 rubles 50 kopeeks per bottle; hungary wine from 2 rubles 50 kopeeks to 6 rubles the bottle.

SECTION VI.

Of Coins, Measures, and Weights.

WE learn from history, that previous to the tenth century. neither foreign nor domestic coin was known in Russia. Instead of it small pieces of marten and squirrel-skins, stamped, were the only currency. But, from that period, frequent mention is made in the chronicles of grecian and other sorts of money. It is the opinion of some, that the first coins were introduced by the Tartars into Russia, and that the russian word for money, denghi, is derived from the tartarian word tanga, which signifies a token; but, that when coins were impressed with the arms of Mosco,

Mosco, namely, a St. George with his spear, the name kopeeka arose, from kopæ, or kopeitzo, a spear. There was, however, at that time no mint in Russia, nor was the right of coining a prerogative of majesty; but the gold and silver smiths struck the coins, any one of whom might convert his uncoined silver, with a moderate allowance for his work, into coined money of equal weight. So early as 1469 mention is made of such a deneschnoi-master, (money-maker,) Ivan Frafin by name*. Nearly about the same time coins were also struck by the merchants of Novgorod and Pscove, which cities were connected with the german Hanfa, and afterwards the English obtained licence in their letters patent of the year 1569 to stamp dollars and little pieces of money in Mosco, Novgorod, and Pscove. It is known too that coins were even struck before this in the several residence-towns of the partitioned princes, as in Tver, Riazan, &c. At last, however, tzar Ivan Vassillievitch about the same period, namely, towards the middle of the 16th century, instituted the first regular coinage, set up a mint at Mosco, and caused three rubles to be struck

* The grand prince Ivan Vassillievitch I. took, as has already been mentioned, into his service in 1475, a certain Aristoteles of Bónonia (or Bòlogna) who was his architect, statuary, founder, and at the same time his master of the mint. Pet. journ. 1782, tom. ii. p. 91.

out of one grivenka*. In the mean time we have russian coins of the moscovian sovereign, which probably were struck about the year 1420†. In the reign of Ivan Vassilievitch the russian coinage began in general to acquire a totally different form, and the various denominations of specie were ordered to be coined after a certain alloy and weight. Yet at this time, and a long while afterwards, the RUBLE was only an imaginary coin. The first actual rubles were struck during the reign of czar Alexèy Mikhailovitch in the year 1654, though history makes mention of the ruble already about the year 1317. Whereas we have oblong silver kopeeks of that period and later. In general, till towards the end of the 17th century, more of the small sorts than the

* What the grivna, grivenka, nagoti, &c. properly were, whether really stamped coin, or, as is much more probable, a certain weight of silver, and how much, is not yet agreed on.

† Yet Lèvesque says, "Ce fut sous le règne de Vassil Dmitrovitch, qu'on commença à frapper en Russie de l'argent monnoyé. Il montoit sur le trône 1389. Moscou & Tver etaient les premières à employer une monnoie tatare nommé *denga*. — Novgorod prit la résolution en 1420 de battre elle-même sa propre monnoie." Hist. de Russie, tom. ii. p. 265. Sed Bachmeister, beschreib. des nat. kab. Also prince Sghitserhatof, Pet. journ. 1781, tom. ii. p. 59.

large

large of ruffian coins were struck *. According to Olearius, under the last-mentioned tzar the german dollars were in strong circulation as large coin, which probably had chiefly been brought in through the hanseatic commerce. Out of these very dollars (not from silver bars) the rubles were

* “ Tzar Mikhaila Feodorovitch,” says Olearius, “ caused
 “ his own coin to be struck in the country, and in four dif-
 “ ferent cities, Mosco, Naugard, (Novgorod,) Tver, and
 “ Pfcove, coined of pure silver, and sometimes of gold, all
 “ little monies, as likewise the little danish sechslings,
 “ smaller still than the german pfennings, partly round and
 “ partly oblong. On one side was commonly a horseman
 “ sticking with a spear a dragon which he had subdued;
 “ before this was only the naugardian arms, but on the other
 “ side the grand prince’s name, and the town where it was
 “ coined. These sorts were called deng (denga, denuschka)
 “ and kopeck, each equal to a holland stuyver, or near as
 “ much as a half meißnisch, or a holsteinisch grosch,
 “ going (according to the relative value of money at that
 “ time) 50 to a rix-dollar. They have yet smaller sorts, as,
 “ half and quarter kopecks, which they call poluskè (po-
 “ luschka) or muskoffkè. It is difficult to trade with them
 “ on account of these little bitlings, as they easily slip
 “ through the fingers; therefore it is customary with the
 “ Russians, when they are going to look at or measure out
 “ goods, to take the kopecks, frequently fifty together in
 “ their mouths, continuing to talk and to act, so that they
 “ cannot be perceived. — They bargain by altines, griffen,
 “ (grieveniks,) and rubles; though they have in fact not
 “ those sorts of money in whole pieties, yet have them in
 “ certain numbers of kopecks; an altine in three, a griff in
 “ ten, and a ruble in a hundred kopecks.” Adam Olearius,
 reisebeschreibung nach Mosko, &c. Schlesvig 1663, p. 223.

at that time struck. But likewise other dollars were recoined into russian rubles; thus, for example, the first ruble of 1654 is still extant, and it is easily discernible to have been previously a spanish cross-dollar*. — A foreign dollar then passed for 50 kopeeks. But the war that shortly after broke out with Poland, perplexed the russian finances; and for defraying the charges of the war recourse was had to the diminution of the coin. Then, for some time KOPEEKS and ALTINES were struck of copper. By the standard, arising from the continuance of the gradual diminution of the worth of the small monies, the value of a rix-dollar at length got up to 1 ruble or 100 kopeeks; and though afterwards the weight of the former was improved, yet the extrinsic value of the ruble remained unaltered at 100 kopeeks. For the greater convenience of change in trade quarter-ruble-pieces of 25 kopeeks were also at this time struck. — Péter I. made various alterations in the coinage. He ordered, by an edict of 1724, that no more silver kopeeks should be coined; causing in their stead one and two-kopeek-pieces of copper to be struck, which had on one side the St. George, and on the other within the initial of the emperor's name П, the value of the coin. His silver rubles, of which the oldest are of 1701 and 1704, are distinguished by the legend expres-

* Von Madai, thaler-kabinet, part. i. n. 49.

five in the russian language of an improved standard: *Moneta dobraya jena*, rubel: good money, a ruble. Upon this all other mints were abolished, except those at Mosco: in which capital there were two coining houses; one *denèschnoi* for silver, and the other *monetnoi dvor* for copper coins. Afterwards, however, a mint was set up in St. Petersburg; and this is at present the only one where gold and silver coins are struck. The mint in Mosco indeed still exists, but it is confined to the coinage of copper money. Under the empress Elizabeth the mint for the COPPER MONEY was in Ekatarinenburg; in the year 1766 another mint for copper was erected in Sufun at the mineral works of Kolhyvan, and in 1783 one of the same kind at Theodosia in Taurida. The late empress formed the resolution to erect a copper-coinage in the environs of Ekatarinenburg on the Isët (*Nischneisetskoi-monetnoi-dvor*), and another on the stream Babka near the Kamma (*Babkinskoi-monetnoi-dvor*). There are therefore at this time in Russia one mint for silver and six for copper coin. — After the famous battle of Pultava, among the swedish officers who were taken prisoners, were some who understood the art of coining; the emperor accordingly employed them in his mint. It was in consequence of this that his impress on the coins from that battle till his journey to France, 1709—1718, is so much *à la suédoise* with the hair combed back, &c. Peter

therefore brought medailleurs with him from France, and from that time appeared what are called the sun-rubles, now become very scarce, having on the reverse a sun in the centre, and in the area his initial in rufs П, just as the L was struck on the french louis-d'or. Besides the ruble, at the same time were coined the HALF and the QUARTER RUBLE (Poltiniki and polpoltiniki), also with his likeness and the imperial eagle. The grieven or the 10th part of a ruble, had ten dots with the inscription ГРИВЕННИК on one side and the eagle on the other. The altines or 3 kopecks had on one side the eagle, and on the other stood with the date of the year, the word ALTINIK.

These were all the silver coins under Peter I. in which outwardly no alteration was made, excepting that for a long time no more altines have been struck, and the empress Elizabeth for a short time caused five-kopeck-pieces to be coined, but this practice has now long since ceased *. — The GOLD COINS in Russia have always been struck in somewhat larger sorts than those of silver. Ducats were coined by tzar Ivan Vassilievitch, and half-ducats are found of tzar Feodor Ivanovitch. A ten-ducat-piece is shewn of the false Demetrius †.

* Schmidt's beytr. zur kenntniß der staatsverfassung von Rußland, tom. i. p. 50.

† J. T. Koehler vollständig. dukatenkab. tom. i. n. 112—115.

Most of the gold coins, however, still subsisting of the antient times, consist of very small sorts. Nay, there are some that are even called GOLDEN KOPEEKS*. A russian ducat was formerly equal to two rubles silver, whence probably the denomination golden ruble arose, which, as well as the quarter-ruble are now shewn as curiosities. — Under Peter I. the gold coins were either two-ruble-pieces, with the apostle Andrew on the reverse, which, however, are very rare; or ducats with latin inscription. On one side is the bust of Peter with a crown of laurels, on the other the russian imperial eagle, on the breast whereof is the St. George. Both sides have round them, Petrus Alexii I. D. G. Russ. Imp. M. Dux Moscoviæ 1716. These coins where Peter bears the imperial title, were struck long before the peace of Nyftadt, The empress Elizabeth first caused IMPERIALS, HALF-IMPERIALS, GOLDEN RUBLES, and HALF-RUBLES, to be struck. — At the accession of Peter I. the COPPER COINS were half-kopeeks (denuschka or denga), kopeeks, and five-kopeek-pieces. On the first, stands on one side DENGA, and on the other 1706. The kopeeks have on one side the St. George, and on the other KOPEIKA. The old ones were called in on account of their deformity, and the kopeeks were now struck with only an extremely little chevalier St. George,

* Joh. Fried. Joachims unterricht vom munzwesen.

and the date 1724 on one side, and the word kopeika on the other. These under Peter II. were a great deal smaller, and the former called back into the mint. On these little ones are seen the knight George on one side with the exergue Moskva, and on the other the letter π placed in a four-fold cross, having in one interline 1728, in the other kopeika. The five-kopeek-pieces were likewise submitted to several alterations. Those of Peter I. consist of $1\frac{1}{2}$ lote (4 solotniks) copper, and are on one side exactly like the old kopeeks, marked with the value and the date in a cross on one side, on the other with a little russian eagle, having five dots round, for the benefit of such as are not acquainted with cyphers. The empress Anna, without recoinage, fixed them at 4; Elizabeth gradually reduced them to 3 and to 2 kopeeks. At last in 1755 Elizabeth caused them to be struck down, with a new die, to 1 kopeek. An eagle reposing on clouds holding a crowned shield between his wings, in which on one side stood the empress's cypher, and on the other 1 kopeika with the date. In the year 1757 these very coins got up again to 2 kopeeks, bearing a new impress, being on one side the knight St. George, on the other the cypher of the empress; and thenceforward, with precisely the same die, from the old dengas or half-kopeeks were struck whole kopeeks, from the poluschkas half-kopeeks, and new poluschkas with the very same impress, which

which were as small and as light again as the former ones of the empress Anna. Peter III. struck the same coins again at 4 kopeeks, with a new die, having the St. George on one side, and prussian armorial trophies with the number 4 and the russian explanation of it on the other. These were afterwards again depreciated to 2 kopeeks. The copper five-kopeek-pieces that had been struck by Elizabeth were fixed by Peter III. at 10, but Catharine II. reduced them again to 5 kopeeks. For the accommodation of the provinces of Esthonia and Livonia, the empress Elizabeth in 1757, caused to be struck the livoneses of whole, half, and quarter pieces. A whole piece was in value 96 kopeeks. The coinage of these presently ceased; and, as the whole livoneses were of more intrinsic value than the subsequent rubles, they were almost all re-melted into rubles*. The coins now in circulation are:

GOLD.

	Rubles.	Kop.
Imperials	10	0
Half-imperials	5	0
Ducats, scarce	2	30
Andrew-ducats, scarce	2	0
Two-ruble-pieces	2	0
Golden rubles	1	0
Half rubles	0	50
Quarter-rubles, very rare	0	25

* Schmidt's beytr. zur kenntn. der staatsverf. von Russl. p. 50.

SILVER.

SILVER.

	Rubles.	Kop.
Ruble	0	100
Half-ruble	0	50
Quarter-ruble	0	25
Twenty-kopeek-pieces	0	20
Fifteen-kopeek-pieces	0	15
Grievniks	0	10
Five-kopeek-pieces	0	5
Altines, seldom to be seen	0	3

COPPER.

Grievnik	0	10
Pataki, the most common	0	5
Grosch	0	2
Kopeek	0	1
Denuschka	0	$0\frac{1}{2}$
Poluschkka	0	$0\frac{1}{4}$

These coins stand in the following relational value:

Ruble,	Grievnik,	Altine,	Kopeeks,	Denuschka,	Poluschkka.
1	10	$33\frac{1}{3}$	100	200	400
	1	$3\frac{1}{3}$	10	20	40
		1	3	6	12
			1	2	4
				1	2

As to the intrinsic value of the russian coins, concerning the standard of the former ducats, nothing more is known than that 67 of those of 1,12 to 1729 contained 23 karats 4 grains of fine gold.

gold*. Among the merchants $117\frac{1}{2}$ are equal in weight to a russian pound, and they were rated at 94 solotniks assize†. — By the new assay observed under the empress Elizabeth, a pound of ducat-gold held 93 solotniks fine gold, and 3 solotniks alloy of copper, and out of this 118 pieces were coined. In a pound of gold for Andrew-ducats were only 75 solotniks of fine gold, and 21 solotniks copper, and out of this 100 pieces were struck. The pound of silver for rubles, halves, and quarters, consisted of 84 kopeeks. The pound of silver for grievniks held 72 solotniks fine silver and 24 solotniks copper, from which likewise 15 rubles 84 kopeeks were struck. In denuschkas and poluschkas from a pood of copper 10 rubles were coined‡. — An imperial under the empress Elizabeth weighed $3\frac{1}{2}$ solotniks, and a half imperial $1\frac{1}{2}$ solotniks, and the pound of gold to this purpose must be 88 solotniks fine§. The proportion between gold and silver was at that time as $1=13\frac{1}{2}$. In pursuance of the edict of the 18th of December 1763, this proportion was however fixed at $1=15$. A solotnik of fine gold had hitherto been coined into 2 rubles $80\frac{1}{4}$ kopeeks, but from that time forwards into 3 rubles $55\frac{1}{2}$ kopeeks.

* Hirsch, in des deutschen reichs munzarchiv. tom. vi. p. 242.

† Kruse, Contorist, p. 269.

‡ Tozen, staatkunde, tom. ii. p. 966.

§ Ukase of 23d November 1755.

The solotnik of fine silver was till 1762 coined to $20\frac{1}{7}$ kopeeks, but at present to $23\frac{1}{7}$ kopeeks. — Conformably to the said ukase, the imperials and half imperials must be coined according to the 88th assay, and from each pound of gold of this alloy 31 imperials and 2 rubles $88\frac{8}{9}$ kopeeks must be coined, (which renders every imperial $3\frac{3}{4}$ solotniks in weight,) but of half-imperials 62 and 2 rubles $88\frac{8}{9}$ kopeeks each weighing $1\frac{1}{8}$ solotniks. The large silver coins are coined after the 72d assay, that is, a pound must contain 72 solotniks fine silver, and every pound must produce in rubles and half-rubles for 17 rubles $6\frac{2}{3}$ kopeeks, in quarter-rubles and double grievniks for 17 rubles $15\frac{5}{8}$, and in five-altines and grievniks for 17 rubles $25\frac{1}{8}$ kopeeks fine silver*. A ruble according to this standard is worth about 23 grosches 7 pfennigs in two-third-pieces by the leipzig standard. But the merchants make a considerable distinction between old and new imperials and rubles.

* The fineness of the russian imperial is of 22 karats, and that of the silver 12 lotes. A pound or 92 solotniks of fine silver is worth 22 rubles $75\frac{1}{2}$ kopeeks; a pound of coined silver 17 ruble $6\frac{2}{3}$ kopeeks; the difference therefore is 569 kopeeks, or the fine silver is to the coined as $10=7\frac{1}{2}\frac{1}{2}\frac{3}{3}$. A pound of fine gold is worth 341 rubles $33\frac{2}{3}$ kopeeks; but the coined 312 rubles $88\frac{8}{9}$ kopeeks; the difference is therefore 28 rubles $44\frac{1}{9}$ kopeeks, or as $10=9\frac{5}{4}\frac{8}{13}$. — Nine and a half rubles make a mark of Cologne. The new ruble is at Hamburg 2 marks 10 schilling banko, and an imperial 24 mark $9\frac{1}{2}$ schilling in banko.

Old

Old imperials, 10 rubles extrinsic value, are rated by the german standard at 11 dollars 16 grosches, whereas the new at only 9 dollars 18 grosches. And in like proportion also old rubles at 1 dollar 3 grosches, but new ones diversely at 25 grosches, or 1 dollar, or even 1 dollar 1 grosch *. The small sorts of coin are according to the convention-standard, the louis-d'or at 5 dollars, of the year 1774, calculated in the following manner: Grievnik at 2 grosches 8 pfennig; altine $9\frac{1}{4}$ pfennig; kopeek $9\frac{1}{4}$ pfennig; denuschka $\frac{1}{4}$ pfennig; moskofca $1\frac{5}{8}$ pfennig; piatkopeek (piatak) 1 grosch 4 pfennig, and polupoltinik (quarter-ruble) 6 grosches 9 pfennig.

Concerning the value of the most antient copper coins nothing is satisfactorily known †. Under the regency of the princess Anna five-kopeek-pieces extrinsic value were struck, which in intrinsic were scarcely worth 2 kopeeks. The polish

* This distinction between old and new rubles appears likewise hence, that an alberts-dollar in 1714 was only worth 80 kopeeks, but now 125 to 130 kopeeks. This however depends much on the course of exchange. — A silver ruble of the last reign contained almost 375 *as* dutch, and is therefore nearly worth $37\frac{1}{4}$ stuyvers. Before the late war the course of exchange at Petersburg was 40 stuyvers and upwards; in 1789 it was down to 30, afterwards even at $28\frac{1}{2}$ stuyvers, and lately $22\frac{1}{2}$ pence english. — Between 1758 and 1768 it was from $38\frac{1}{4}$ to $45\frac{1}{4}$ stuyvers.

† Under Peter I. from 40 pound of copper were struck 20 rubles. Weber, p. 52.

jews

jews took advantage of this by introducing a prodigious quantity of still baser counterfeits into Russia, said to have amounted to upwards of a million of rubles. On this account it was that under the empress Elizabeth the aforementioned alteration in the copper coinage took place. But never were matters in so bad a state as under Peter III. He struck 20, 15, and 10 kopeck pieces, which intrinsically had not a third part of that value. On the accession of Catharine II. these were unconditionally recalled.

At present all the russian copper-money, *velikorossiskaia moneta*, is coined the pood at 16 rubles, in sorts of five, two, one, half, and quarter kopecks*. But at the copper-mint at Sufun, by ukase, 15 Dec. 1763, *grievniks*, five-kopeck-pieces, *grosches*, kopecks, *denušchkas*, and *polušchkas*, are coined by a different proportion. As each pood of copper there contains $1\frac{1}{4}$ solotniks of fine gold, and $31\frac{1}{8}$ solotniks of fine silver, it is ordered, that this shall be coined to 25 rubles, adding, that in order to distinguish this money from others, it must bear the fiberian arms with the characteristic inscription *Sibirskaia moneta*, but to be current only in Siberia†. This, however, was in force only till 1781; for since that

* A ruble copper-money is, by the price of foreign copper, worth in Holland about 20 stuyvers.

† See *baron von Pruth, Gründliche nachricht vom münzwesen*, 1784, p. 407.

time,

time, the gold and silver being extracted from the copper to a very little, it is likewise coined at 16 rubles with the customary russian impress, and is current in Russia as well as in Siberia*.

Besides the hard coin, PAPER-MONEY is also current in the russian empire under the name of bank-assignments. Till the year 1787 these notes of 100, of 50, and of 25 rubles in circulation, were estimated at the amount of 50 millions of rubles. These were so readily taken throughout the empire instead of copper-money, that in many parts of the country one, two, as far as five per cent. *agio* must be given to get paper-money for

* Of the siberian copper-coins containing gold and silver, from the beginning to 1781, were struck in all 3,799,661 rubles 93½ kopecks, wherein were 14 pood 17 pound 19 solotniks, gold, in value 197,016 rubles 88½ kopecks, and 1228 pood 8 pound 42 solotniks silver, in value 1,117,944 rubles 89 kopecks, together 2,484,700 rubles 15½ kopecks, gold and silver. A question arose how high the expence would rise, if these coins were interchanged, in order to get out the two noble metals; and it was calculated, that after deducting the waste by fire, there might be obtained 7 pood 8 pound 57½ solotniks of gold to 98,508 rubles 44 kopecks, and 1149 pood 2 pound 5 solotniks silver to 1,115,892 rubles 2½ kopecks, together 1,214,400 rubles 46½ kopecks, and that the cost of extracting, with the loss of metal, would amount to 547,034 rubles 95 kopecks. At the expence therefore of about half a million copper or paper money above 1,200,000 rubles gold and silver would be gained; surely it would be well worth while to undertake this operation.

2000 T

copper.

copper. In that year 1787 the old ones were liquidated, and a fresh issue was made of bank-notes to the amount of 100 millions*. At present they are of 100, of 50, of 25, of 10 and 5 rubles. The first three are of white, the ten-ruble notes of red, and the five-ruble notes of blue paper. Of the two last sorts the 10th part of the whole sum of 100 millions, namely 10 millions, were issued. By an ukase of the 3d of August 1788, ten and five ruble notes were again made to the amount of 10 millions, at the same time commanding, that the like sum in hundred-ruble-notes should be extinguished, that there might be never more than the stated 100 millions in circulation. All these papers are immediately converted into copper-money on demand at the assignments-banks. These banks are at St. Petersburg, Mosco, Yaroslaf, Smolensk, Veliki-ustiug, Astrakhan, Nishnei-Novgorod, Vischnèvolotschok, Novgorod, Pscove, Tver, Nefchna, Kief, Kursk, Kharkof,

* Of these the new imperial loan-bank or lombard received to the sum of 36 millions, viz. 22 millions for the nobility, 11 millions for the towns, and 3 millions for Taurida alone. — The assignments-bank was opened in 1769, and is distinct from the new loan-bank. — Mayer states the fixed sum of the bank-notes first put into circulation at 60 millions of rubles; but I know for certain that this statement is considerably too high. Abbé Raynal comes somewhat nearer the truth who sets it down at about 50,000,000, with whom Mr. Còxe and M. le Clerc agree. Hermann's *statistische schilderung von Russland*, p. 474.

Tambof,

Tambof, Orel, Tula, Kazan, Kherfon, Archangel, Riga, and Reval. Those in Tobolsk and Irkutsk have been lately abolished.

The auriferous silver produced at the siberian mines is separated at St. Petersburg in the laboratory constructed for that purpose in the fortress there. From the kolhyvanian mines come annually, as before-mentioned, about 800 to 1000, and from the nertschinskian about 400 to 500, of both together about 1300 to 1400 pood. The former contains 3 or $3\frac{1}{2}$ to 4 per cent. but the latter only $1\frac{1}{4}$ to $1\frac{1}{2}$ per cent. gold. — The gold and silver here separated are delivered into the petersburg mint, which is likewise in the fortress; and there, together with the gold from Ekatarinenburg and the german dollars brought in through the custom-house, are struck into the several sorts of russian coins.

It is calculated that at present there is in circulation in the russian empire at least 130 millions in hard cash; and, if to this we add the hundred million in bank-notes, the whole circulating mass of money amounts to about 230 millions of rubles.

Concerning the russian weights and measures it is to be observed, that

A berkovetch contains 10 pood.

A pood 40 pounds.

A pound 96 solotniks.

A solotnik 96 parts.

Three solotniks are one lote.

A cool (sack) of coarse meal should weigh 9 pood 12 pound.

A cool of rye 8, or 9, or 10 pood.

A cool contains 10 chetveriks.

Fifteen chetveriks make about a dutch last.

A chetvert contains 2 osmin.

An osmin 2 payoks.

A payok 2 chetveriks.

The chetverik, which is the 8th part of the chetvert, contains 2 polchetveriks, which are in diameter 12 french inches 6 lines, and in depth 11 inches 9 lines.

The polchetverik is 10 inches 9 lines in diameter, and 7 inches 6 lines in depth. It is 2 chetverks or quarters.

The chetverk or quarter, contains 2 garnitzas of 8 inches 6 lines in diameter, and 4 inches 6 lines in depth.

The polgarnitza has 5 inches 8 lines in diameter, and 3 inches 4 lines in depth.

A cask of brandy, linseed oil, or hemp oil, called sorokovaia-botschka, contains 40 vedros or $13\frac{1}{2}$ ankers, which make $533\frac{1}{2}$ parisian pints.

The anker holds 3 vedros, each containing 40 pints.

The vedro has 4 chetverki or quarters, or $13\frac{1}{2}$ pints.

The chetverka holds 2 osmaki, which are also called krushki, each holding $3\frac{1}{2}$ pints.

Long measure: A desattine has 3200 square sajènes. That is, a desattine is 80 sajènes long and 40 broad.

A sajène is 3 arshines.

An arshine is 16 vershoks, or 28 english inches.

A verst is 500 sajènes or 1200 paces. Twenty versts make 3 german miles.

A desattine is 210 rhenish feet broad and 560 feet long, being 117,600 square feet.

All these weights and measures are alike throughout Russia, excepting Livonia and Finland.

But in Riga the following is the weight: A last contains 12 ship-pound; a ship pound 4 lose; a lose 5 liespound; a liespound 20 common pounds. Forty-five pounds in Riga are

are 46 pounds in Russia. A last of rye contains $22\frac{1}{2}$ tons; a last of wheat or barley 24 tons; a last of malt, pease, or oats 30 tons; a last of linseed or potashes 12 tons. A ton contains 12 lofes; a lofe 6 kulmits; a kulmit $4\frac{1}{2}$ kans; a kan 2 stofes. A fuder contains 6 ohms; an ohm 4 ankers; an anker 5 quarts; a quart 6 stofes. A russian vedro holds 10 stofes. Thirteen ells in Riga make 10 arshines in Russia. In Riga a last of rye holds 45, and in Pernau 48 lofes. A last in Reval holds 24 tons, or 72 lofes, and 44 Riga lofes amount to one last of Reval. The last of Riga and of Ham-
burgh agree nearly together.

Comparison of russian and foreign long-measure.

If we divide a vershok or the 16th part of an arshine into a hundred equal parts, so that

A vershok-contains 100 such parts,

An arshine 1600, and-

A sajène 4800, then

I. The foot of Paris will contain

	Verlh.	Parts.
London	7	31
Rhenish	6	86
Denmark	7	6
Sweden	6	12
Amsterdam	6	69
Leyden	6	38
Brussels	7	6
Dantzic	6	19
Augsburg	6	45
Brunswick	6	66
Bavaria	6	39
Cologne	6	56
Gotha	6	19
Göttingen	6	47

			Verst.	Pars.
Halle	-	-	6	72
Leipzig	-	-	7	9
Nurenburg	-	-	6	83
Prague	-	-	6	79
Straßburg	-	-	6	51
Vienna	-	-	7	11
Zurich	-	-	6	80
Geneva	-	-	10	98
Lyons	-	-	7	67
Lisbon	-	-	7	4
Bologna	-	-	8	53
Turin	-	-	11	54
Milan	-	-	8	93
Rome	-	-	6	62
Venice	-	-	7	82
Constantinople	-	-	15	94
II. The palma of Rome	-	-	5	2
The krama there	-	-	5	59
Naples	-	-	5	93
Genoa	-	-	5	64
III. The french toise	-	-	43	84
IV. The english yard	-	-	20	57
V. The english fathom	-	-	41	15
VI. The castilian varre	-	-	18	83
VII. The portugueze cavidos	-	-	14	53
VIII. The portugueze Barros	-	-	25	45
IX. The braccia of Florence	-	-	12	33
Bologna	-	-	13	49
Milan	-	-	10	99
X. The ell of Paris in silk	-	-	26	72
_____ in cloth	-	-	26	71
_____ in linen	-	-	26	59
Amsterdam	-	-	15	52
Berlin	-	-	15	0
Brabant	-	-	15	53
Breslau	-	-	12	37
				Brussels.

			Verst.	Parts.
Brussels, large	-	-	15	62
—— small	-	-	15	40
Copenhagen	-	-	14	12
Dantzic	-	-	12	91
Dresden	-	-	12	73
Frankfort on the Mayne	-	-	12	14
Geneva	-	-	25	73
Hamburg	-	-	12	89
Leipzig	-	-	12	72
Louvaine	-	-	26	41
Nuremburg	-	-	14	84
Strasbourg	-	-	11	48
Vienna	-	-	17	48

Therefore 100 Paris ells in silk make 167 arshines

16 Berlin	-	15
100 Amsterdam	-	97
400 Vienna	-	437
200 Leipzig, &c.	-	159

Comparison of various Miles.

A russian verst containing 500 sajènes, and each sajène 7 foot of London, though here divided into 3 arshines, the several miles are accordingly thus divided into versts, sajènes, and arshines;

			Versts.	Sajènes.	Arshines.
German mile	2	-	6	475	1 $\frac{1}{4}$
French league	-	-	4	84	0 $\frac{3}{4}$
English mile*	-	-	1	368	2 $\frac{1}{2}$
Italian mile	-	-	1	368	2 $\frac{1}{2}$
Spanish mile	-	-	5	396	0 $\frac{1}{2}$
Swedish mile, or 36,000					
Swedish feet	-	-	10	17	0

* Sixty english miles are equal to one degree of latitude.

One hundred and four russian versts are equal to one degree of latitude.

Five french leagues make 3 german miles; 4 english sea miles or italian miles amount to but 1 german mile; six spanish miles are equal to 5 german miles, and just so many make 16 english land miles. Lastly, as 15 german miles compose a degree of the æquator, so to such a degree 104 versls, 131 sajénes, 1 arshine, $7\frac{3}{8}$ vershoks are requisite. But 20 french leagues, 60 english miles; likewise 60 italian miles, and 18 spanish miles are reckoned to a degree.

*Comparison of various foreign Weights with the
Russian.*

A pound at			by russian weight.		
			Pounds.	Solot.	Hun. parts.
Aix-la-chapelle	-	-	1	33	44
Amsterdam	-	-	1	19	33
Antwerp	-	-	1	13	44
Augsburg, great weight	-	-	1	18	79
----- small	-	-	1	14	37
Bafil	-	-	1	13	52
Berlin	-	-	1	13	26
Bologna	-	-	0	84	56
Brunswick	-	-	1	13	30
Bremen	-	-	1	19	66
Bressau	-	-	0	94	62
Brussels	-	-	1	13	44
Bourdeaux	-	-	1	18	75
Cadiz	-	-	1	11	31
Cologne	-	-	1	13	30
Constantinople	-	-	3	9	94
Copenhagen	-	-	1	13	52
Cracow	-	-	0	94	52
Dantzic	-	-	1	5	66
Florence	-	-	0	79	24
Frankfort on the Mayne	-	-	1	13	70
Geneva	-	-	1	32	80
Genoa	-	-	0	73	90

Gotha

			Pounds.	Solot.	Rub. parts.
Gotha	-	-	1	22	2
Hamburgh	-	-	1	17	28
Koenigsburg, old weight			0	88	77
————— new weight			1	13	23
Leipzig	-	-	1	13	66
Lyons	-	-	1	1	71
Lisbon	-	-	1	11	20
Leghorn	-	-	0	79	55
London	-	-	1	9	51
Lubek	-	-	1	16	83
Lanenburg	-	-	1	17	55
Magdeburg	-	-	1	13	23
Marseilles	-	-	1	0	55
Memmingen	-	-	1	23	54
Munich	-	-	1	34	92
Naples	-	-	1	3	13
Nuremberg	-	-	1	23	40
Paris	-	-	1	18	47
Prague	-	-	1	23	92
Ratisbon	-	-	1	34	92
Rome	-	-	0	79	22
Saltzburg	-	-	1	34	72
Schaafhausen	-	-	1	11	95
Strasbourg	-	-	1	14	73
Stuttgard	-	-	1	15	70
Venice, great weight	-	-	1	15	36
————— small	-	-	1	8	45
Ulm	-	-	1	13	44
Warsaw	-	-	0	88	22
Vienna	-	-	1	35	17
Zittau	-	-	1	13	23
Zurich	-	-	1	27	39

* * * For ordinary purposes the ruble may be estimated at 4s. during the greater part of the reign

reign of the late empress—such readers as desire a nearer specification of its value will satisfy themselves on its fluctuations from the tables, p. 487, 502. the note on p. 557, &c.

LANGUAGES are indeed properly no object of political œconomy; perhaps, however, the reader will indulge me in a word or two on the Russ, before we conclude. Its beauties, the copiousness and energy of its expressions, &c. are acknowledged and celebrated by several philologists and literary men. Mr. Schlœtzer, whose judgment in such matters will not be questioned, gives it the preference to almost all the european languages. It has been much cultivated of late years; several grammars and dictionaries have been made; numerous translations into it are constantly appearing, and the Russian Academy is indefatigable in the restoration of its purity. — A foreigner, with his utmost efforts, can seldom attain to a pronunciation tolerable to the ears of a native; much less if he have only books for his guides: innumerable peculiarities and anomalies render it so extremely difficult. The russian grammarians themselves are not agreed even concerning the number of letters contained in the alphabet. The Elements
of

of the ruffian language, published some years since in 48 pages 4to. make the number of letters 41; Charpentier, in his *Elemens de la Langue Ruffe*, knows of no more than 31; while Rodde, with greater propriety, fixes the number at 38. Some of them the foreigner rarely learns to pronounce properly, particularly the three distinct fibilating founds, the felo, the femlia, and the flavo; the two very different fchas, the jevetè, and the tſchtſcha; the two mute letters, yerr and yer; but eſpecially the yeri, or more properly yery, which is founded neither entirely like u, ui, ue, or e, but requires fomewhat of an intermediate found between them. Not to mention the numerous irregularities of the declenfions and the peculiarities of the fyntax; the accent alone, which frequently bounds backwards and forwards from the fyllables, throws the learner into great perplexities. Thus, ruka, the hand, has the accent on the laſt; but in the plural number, ruki, the hands, on the firſt fyllable. Yet theſe perplexities are nothing in comparison of what he meets with in conjugating, as almoſt every verb has ſo many peculiarities that it may be called irregular. Scarcely one can be found that has all the 10 tenſes, namely, the preſent, the imperfect, the preterit of unity, the preterperfect, the 3 preterpluperfects, (viz. the firſt, ſecond, and third, each of which includes in it a particular collateral idea), the future imperfect, and the future ſimple or perfect. It is the ſame with the
threefold

threefold infinitive, the threefold imperative, (namely, of the present, of the future imperfect, and of the future simple,) the threefold participle, (viz. of the present, of the imperfect, and of the perfect,) and the threefold gerund. Add to this, that hitherto no general and certain rules have been laid down for forming these tenses. Thus, for instance, the *præteritum perfectum* is frequently distinguished from the *imperfectum*, not merely by prefixing a single letter or more, as *s*, *vs*, *u*, *o*, *ob*, *pro*, *po*, *is*, *fa*, *fo*, *ras*, *vos*, *na*, *vfo*; but it is solely determined by practice, which of these is to be added to every verb. Yet the matter is rendered still more intricate, as it is only with very few verbs that it is possible to guess from any one tense how the present or the infinitive is made; and the two latter often differ so widely from one another, in such complete irregularity, that the present in the first person has scarcely any similarity with the second. One example will illustrate what is here meant: from *brüschi*, I sprinkle, the infinitive is *brüsgat* and *brüsnut*; from *volnuyu*, I make waves, *volnovat*; from *grebu*, I row, *gresli*; from *dremlu*, I slumber, *dremat*; from *jivu*, I live, *jit*; from *zabivayu*, I forget, *zabüt*; from *ischtschu*, I seek, *iskat*. All these are of the first conjugation. Of the second I shall only mention: *lublu*, or properly *liublu*, I love; *liubisch*, thou lovest; *polyubil*, I have loved; the infinitive is *liubit* and *polyubit*: from *platschu*, I pay; *platisch*, thou

thou payest; zaplatil, I have paid; the infinitive is platit, &c. Amidst all these difficulties that a foreigner has to struggle with ere he can make himself but a tolerable proficient in the russian language, no grammars have as yet been made for him except by foreigners: no wonder that their productions are not more complete.

As a specimen of the russian character, I am enabled by the kindness of Mr. Fry, of Type-street, to present the reader with the Alphabet and Paternoster from the types of that ingenious artist.

THE RUSSIAN ALPHABET.

А а	As	a	С с	Slovo	s
Б б	Buky	b	П п	Tverdo	t
В в	Vedy	v	У у	U	u
Г г	Glagol	g & h	Ф ф	Ferte	ph
Д д	Dobro	d	Х х	Khiére	ch
Е е	Yest	e	Ц ц	Tsi	ts
Ж ж	Givété	j	Ч ч	Cherf	ch
З з	Zélo	z	Ш ш	Sha	sh
И и	Ije	i	Щ щ	Schtscha	sch
І і	I	ī	Ъ ъ	Yerr	
К к	Kako	k	Ы ы	Yerrih	i
Л л	Liudi	l	Ь ь	Yere	
М м	Muisliété	m	Ѣ ѣ	Yati	
Н н	Nafhe	n	Э э	Yé	é
О о	One	o	Ю ю	Yu	yu
П п	Pokoï	p	Я я	Ya	ya
Р р	Rtsh	r	Ѡ ѡ	Phita	th
			Ѳ ѳ	Ijitzá	y

NOTES ON THE FOREGOING PAGE.

^a Is founded as g and as h.

^b Is founded as the french j, in jour.

^c Is founded as french ou.

^d Is founded as scotch ch, in loch.

^e Is founded as english sh.

^f Is founded as english sch.

^g These letters are named *yerr* and *yere*; they are both mute letters, and serve only to point out a full or open, and a soft termination of a word; for example, the word doll must be spelt with ruffian characters, ΔOAb, and the word gravel thus TPABEAb.

^h Is named *yerrib*, and is founded as the english short or full i, in thick.

ⁱ Is founded both as english th, and as f.

^k Is named *ijitza*, and is founded as y in symphony.

THE RUSSIAN PATERNOSTER.

Опче нашъ, иже еси на небсѣхъ, да свѣиши ся имя твоє, да прїидеши царство твоє, да будеши воля твоя, яко на небеси и на земли. Хлѣбъ нашъ насущный даждь намъ днесъ. И остави намъ долги наша, якоже и мы оставляемъ должникомъ нашимъ. И не введи насъ во искушенїе, но избави насъ отъ лукаваго. Яко твое есть царство и сила и слава во вѣки вѣковъ. Аминь.

I N D E X.

A

- ABULGASI**, the tartar historian, i. 442.
- Ablution**, several times a day, commanded by the koran, ii. 85.
- Absolute** government, the proper aim of, ii. 221.
- Acetuba**, state of the silk culture on the, iii. 281.
- Aconite**, highly reputed for it's medicinal virtues, ii. 7.
- Acquisitions** to the empire made by Catharine II. i. 282.
- Admirals**, rank and pay of, ii. 271.
- Admiralty** at St. Petersburg, ii. 270. 351.
- Advocates**, livonian, ii. 380.
- Age**, advanced, frequently attained in Russia, i. 23. Universally honoured, ii. 53.
- Aged people**, small number of, i. 544.
- Agents**, abroad, ii. 349.
- Agriculture**, nations addicted to, i. 509. Not the sole business of the peasantry, ii. 25. Neglected for the fishery, iii. 58, 129. Russian, 132. None practicable beyond the 60th deg. n. lat. 133. Manner of carrying it on, 138. Nowhere conducted with so much negligence, 151. Pursued by Russians and Finns, 154. The same in all the northern provinces, 161. Siberian, 163. When it may be said to flourish, 194.
- Air**, sudden changes of, i. 55. Salubrious, 58. Temperature of, in the isle of Oesel, 179.
- Akdingbis**, the Caspian so named by the Tartars, i. 195.
- Alaborg**, in the government of Olonetz, i. 269.
- Alaiskian** mountains, i. 127.
- Alanes**, or Daghestanians, conquered by Tschinghis, i. 412.—Exterminate the Taurians from the Krim, i. 453.
- Albanians**, Moldavians, Valakhians, and Arnauts, i. 506.
- Albrecht** of Apelderer, comes into Livonia as an armed apostle, i. 388.
- Aldenburg**, now Old-Ladoga, i. 269.
- Aleppo**, the Mongoles come to, i. 416.
- Aleutan** islands, connect Kamtschatka with North-America, i. 144. 160.
- Aleutans**, i. 503.
- Alexander**, grand prince of Novgorod, obtains the surname of Nefsky, from a victory over the Swedes on the banks of the Neva, i. 276.
- Alexander Nefsky**, St. order of, ii. 232.
- Alexander the Great**, astonished at the magnificence of the persian baths, ii. 9.
- Alla-Koola**, the chequered mountains, i. 121.
- Allegiance**, oath of, taken by all classes of subjects, ii. 172.
- Allowance,*

- Allowance*, annual, of the grand duke, ii. 227.
- Almanac*, annually printed, for the Ethiopians and Lettish, i. 181.
- Almond-tree*, in the southernmost provinces, iii. 232.
- Alobrand*, a zealous, active, and prudent teacher, i. 393.
- Alphabet*, russian, has forty-one letters, ii. 16. iii. 576.
- Altars*, pagan, still remaining in Livonia, i. 374.
- Altay*, produce of the mines of, ii. 312.
- Altay*, mountains, situation of the, i. 118. Warm springs in the, 245.
- Altines*, of copper, struck, iii. 548.
- Altyn-noor*, lake, surrounded by the Altay mountains, i. 209.
- Alum-manufactory*, iii. 363.
- America*, russian possessions in, i. 4. 283.
- Amethysts*, agates, &c. ii. 313.
- Amoor*, river, belongs entirely to China, i. 230.
- Amusements* at court, ii. 230.
- Anadyr*, the sea of, i. 154.
- Anadyr*, river, rises in the Yablonoï-Krebet, i. 228.
- Anakutan*, one of the Kurilly islands, i. 161.
- Anchor-forges*, iii. 422.
- Anchovies*, a substitute for, iii. 74.
- Andreanofskie-ostrova*, or islands of St. Andrew, i. 144.
- Andrew*, St. order of, ii. 232.
- Angara*, river, when it freezes, i. 57.
- Angling*, a sufficient quantity of fish might be caught by, iii. 84.
- Angora*, goat of, a native of Natolia, iii. 107.
- Animals*, surprising, in Siberia, i. 26. On Behring's island, 157. On the Aleutan isles, 173. On the island of Hochland, 189.
- Anise* and cummin, exported, iii. 189.
- Anna*, empress, council takes part in the election of, ii. 165. Proposes articles to, 184.
- Anne*, order of St. grand-duke master of, ii. 227. 233.
- Antelopes*, found about the Don, ii. 460.
- Antients*, the bath much used among the, ii. 7.
- Antiquities*, in the academy of sciences, i. 448.
- Appeals* to the sovereign, should be difficult, ii. 345.
- Apples* and pears, grow wild as far as 49 deg. n. lat. iii. 228. The kirefskoi apple sometimes weighs four pounds, 229. Importation of, in 1794, 230.
- Apricots* and peaches, in Taurida and Caucasus, iii. 231.
- Apulia* taken from the Greeks, i. 268.
- Aqua fortis* and aquaregia, iii. 361.
- Aquitaine* infested by the Varags, i. 268.
- Arabians*, formerly prevailed from Malacca to Lisbon, i. 264.
- Arable* land, i. 63.
- Arabs* and Persians, a colony of, i. 506.
- Aralians*, i. 479.
- Ar-Amakutan*, one of the Kurilly islands, i. 161.
- Arafchan*, warm springs on the, i. 245.
- Arbooses*, or water-melons, ii. 32.
- Archangel*, sea-salt obtained near, i. 81. 153. A channel of commerce opened at, 278. Fine breed of cattle at, ii. 34. Ships built of larch-timber at, 277. Dock-yards at, 281. A Ship

- Ship goes annually to winter at Spitsbergen, from, iii. 6. Graziery carried on with great success in, 89. A good kind of poney found in the districts of, 109. Origin of the port of, 432. Commerce of, 433.
- Archeanaktides*, founded a monarchy in Bosphorus, i. 453.
- Archipelago*, vessels of war in the, ii. 269.
- Architecture*, proper russian, ii. 40.
- Archives*, of the empire, kept by the senate, ii. 346.
- Arendator*, what that office implies, ii. 288.
- Arskine*, Dr. in favour with Peter the Great, i. 557.
- Argali*, or wild sheep, ii. 462.
- Argillaceous* earths, iii. 319.
- Aristote* of Bologna, a cannon founder, iii. 425. Master of the mint, 545.
- Armenia*, Oktay-khan, makes an incursion upon, i. 416.
- Armenians*, numerous, i. 506.
- Armorial-ensigns*, ii. 228.
- Army*, received an augmentation, ii. 239. Created by Peter, i. 258. Regulations in the, 260. Establishment, expence of, 330.
- Arnauts*, settled at Kherson, ii. 247.
- Arsenical calx*, found in the mineral mountains, iii. 318.
- Artemissia*, moxa of, ii. 7.
- Artichokes* and other vegetables, iii. 224.
- Artillery*, regiments of, ii. 249.
- Asb* and willow, in almost all parts, iii. 255.
- Asparagus*, much cultivated, iii. 224.
- Ass*, not very common in Russia, iii. 115.
- Astrakhan*, taken by tzar Ivan Vassilievitch, i. 3. Heat and rain at, 29. Becomes a russian province, 278. Tartars of, 451. Made tributary, ii. 15. The fishery on the Volga at, iii. 62. Urstchugs granted to the merchants of, 63. The vine planted at, by an austrian Monk, iii. 234. Submits to Russia, 421.
- Astrakhan'skoi Kozaks*, i. 298.
- Ataman*, of like import with hetman, i. 291. His functions at beginning the fishery on the Ural, iii. 68.
- Attila*, spread terror in his train, i. 259.
- Avari*, absorbed by the Bulgarians, i. 266.
- Avaryska*, or Petropavlovsky, i. 174.
- Aurora borealis*, frequent, i. 54. Never observed in Behring's island, i. 157. Novaya Zemlia, iii. 5.
- Authority*, legislative, the monarch alone, ii. 210.
- Autocrat*, that title first used, i. 9. And autocratrix, ii. 178.
- Azof*, the sea of, length and breadth of, i. 176. City of, obtained by Russia, 280. Fishery on, iii. 72. Surrendered by the treaty of Pruth, 450.
- Azof'skoi Kozaks*, i. 285.

B.

- Baary*, khan of the Golden horde, ii. 14.
Babes, bring the plica polonica with them into the world, ii. 74.
Bacon, lord chancellor, observation on baths by, ii. 12.
Baidars, or little canoes, used in searching for sleeping whales, iii. 24. By the Kurils, 38.
Baikal, lake, earthquakes at the, i. 59. Mountains of the, i. 36. Description of the, 203. Warm springs in the, 245. Naphtha sources on the, 250. Fishery on the, iii. 75.
Baker, every soldier his own, ii. 290.
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